

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT), District Four, is conducting a Project Development and Environment (PD&E) Study that proposes improvements to SR 9/I-95 at Lantana Road Interchange from High Ridge Road to Andrew Redding Road.

This Natural Resources Evaluation (NRE) includes a Protected Species and Habitat Evaluation which documents potential involvement with any threatened endangered and/or protected species and their habitat that may result from the proposed roadway and interchange improvements associated with the project's Preferred Alternative. Measures considered for avoiding, minimizing, and mitigating for potential impacts are also included. The evaluation was conducted in accordance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq) and Part 2, Chapter 16 of the FDOT PD&E Manual (2019).

There are thirteen (13) federally or state-listed species with the potential to occur within the project corridor. No natural areas exist within the project area, and the limited habitat available for certain species, including the Florida burrowing owl, Eastern indigo snake and gopher tortoise is degraded. Furthermore, only the gopher tortoise was observed during the species survey. Prior to construction, a 100% gopher tortoise survey will be completed, and any individuals observed within 25 feet of proposed construction will be relocated by a Florida Fish and Wildlife Conservation Commission (FWC) Authorized Gopher Tortoise Agent. The effect determination for the state listed gopher tortoise is '**No Adverse Effect Anticipated**'. All other state listed species have an effect determination of '**No Effect Anticipated**'. The effect determination for all federally listed species except for the Eastern indigo snake is '**No Effect**'. Per the programmatic effect determination key for the Eastern indigo snake, the effect determination is '**May Affect, Not Likely to Adversely Affect**'.

This NRE also includes a Wetland and Surface Water Evaluation conducted in accordance with the criteria from Part 2, Chapter 9 of the FDOT PD&E Manual. The objective of this evaluation is to present findings of the wetlands survey and assessment completed for project's Preferred Alternative. It identifies and describes wetlands and other surface waters within the project limits, assesses potential impacts and evaluates avoidance, minimization and potential mitigation options. No jurisdictional wetlands are present within the project area. Therefore, no direct or indirect impacts are anticipated to wetlands as a result of the proposed improvements.

No Essential Fish Habitat (EFH) assessment is required for this project, as this project has no involvement with any areas that support EFH or National Oceanic and Atmospheric Administration (NOAA) trust fishery resources.

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1.0 INTRODUCTION

The Florida Department of Transportation (FDOT), District Four, is conducting a Project Development and Environment (PD&E) Study that proposes improvements to 0.738 miles of SR 9/I-95 (MP 18.420 to MP 19.158), at Lantana Road Interchange from High Ridge Road to Andrew Redding Road.

This Natural Resources Evaluation (NRE) includes a Protected Species and Habitat Evaluation which documents potential involvement with any threatened, endangered and/or protected species and their habitat that may result from the proposed roadway and interchange improvements associated with the project's Preferred Alternative. Measures considered for avoiding, minimizing, and mitigating for potential impacts are also included. The evaluation was conducted in accordance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq) and Part 2, Chapter 16 of the FDOT PD&E Manual (2019).

This NRE also includes a Wetland and Surface Water Evaluation conducted in accordance with the criteria from Part 2, Chapter 9 of the FDOT PD&E Manual. The objective of this evaluation is to present findings of the wetlands survey and assessment completed for project's Preferred Alternative. It identifies and describes wetlands and other surface waters within the project limits, assesses potential impacts and evaluates avoidance, minimization and potential mitigation options.

Lastly, as indicated in the comments received from the National Marine Fisheries Service (NMFS) Environmental Technical Advisory Team (ETAT) member, no Essential Fish Habitat (EFH) assessment is required for this project, as this project has no involvement with any areas that support EFH or National Oceanic and Atmospheric Administration (NOAA) trust fishery resources.

1.1 PROJECT BACKGROUND

SR 9/I-95 is the main Interstate Highway on the East Coast of the United States serving areas from Florida to Maine. Within the State of Florida, SR 9/I-95 is a major state transportation resource critical in the facilitation of statewide travel, and is included in the Strategic Intermodal System (SIS) established by the Florida Legislature in 2003, for its role in supporting the State's economy and mobility.

SR 9/I-95 has experienced increasing traffic volumes since its completion in Palm Beach County in 1980: fueled largely by population and economic growth within the County. The FDOT has responded to this increased transportation demand with various interventions to improve operations and safety along the SR 9/I-95 mainline including, adding a High Occupancy Vehicle

(HOV) lane and auxiliary lanes from south of Linton Boulevard to north of PGA Boulevard in the 1990s and 2000s, and minor interchange improvements at eight interchange locations within this segment of SR 9/I-95.

In December 2015, the FDOT completed the SR 9/I-95 Interchange Master Plan for Palm Beach County to identify short-term and long-term needs at the interchange locations within the County through the 2040 design year horizon. This Master Plan included design concepts to address traffic spillback onto SR 9/1-95, improve interchange operations, reduce congestion, and increase safety at 17 interchanges from Linton Boulevard to Northlake Boulevard. SR 9/I-95 at Lantana Road Interchange was one of the interchange locations evaluated as part of the I-95 Interchange Master Plan.

A Concept Development Report (CDR) was completed for this interchange as part of the I-95 Interchange Master Plan Study for Palm Beach County. The CDR identified several preliminary short-term and long-term improvements at the SR 9/I-95 at Lantana Road Interchange including:

- Dual right-turn lanes for the SR 9/I-95 southbound off-ramp
- Dual eastbound left-turn lanes from Lantana Road to the SR 9/I-95 northbound on-ramp
- Additional westbound through lane between the SR 9/I-95 southbound off-ramp and High Ridge Road
- Additional eastbound through lane between the SR 9/I-95 northbound off-ramp and Andrew Redding Road
- Improvements at various intersections along Lantana Road including High Ridge Road, Andrew Redding Road, Sunset Road and Shopping Center Drive

Within Palm Beach County, the Transportation Planning Agency (TPA) adopted a vision to transform the County into a place where bicycling is a safe and convenient transportation option and an attractive form of recreation for residents and visitors alike by 2035. In keeping with this vision, Palm Beach County adopted the Master Comprehensive Bicycle Transportation Plan (MCBTP) with recommendations to include/improve bicycle facilities throughout Palm Beach County. Lantana Road from Jog Road to Dixie Highway was identified as one of the corridors for inclusion in the Priority Bicycle Network.

This PD&E Study is being conducted to evaluate concepts that improve interchange operations and safety, accommodate future transportation demand at the Lantana Road Interchange, and provide bicycle accommodations along Lantana Road within the project limits.

1.2 PROJECT DESCRIPTION

The SR 9/I-95 at Lantana Road interchange is primarily located within the Town of Lantana in Palm Beach County, Florida, between the 6th Avenue South (1.54 miles to the north) and the Hypoluxo Road (1.04 miles to the south) interchanges. The interchange provides access to the Palm Beach County Park/Lantana Airport, Hypoluxo Island, Lantana Scrub Natural Area, and the Lantana Lake Worth Health Center. The study interchange is a typical diamond interchange and the limits along Lantana Road extend from High Ridge Road to Andrew Redding Road. The South Florida Rail Corridor (SFRC)/CSX Railroad runs parallel along the west side of SR 9/I-95 in this area and crosses below an elevated section of Lantana Road.

SR 9/I-95 near the Lantana Road interchange is a ten-lane divided urban interstate, aligned south to north, providing four general purpose lanes and one High Occupancy Vehicle (HOV) lane in each direction. Auxiliary lanes are provided in both the northbound and southbound direction within the Study Area. At the Lantana Road interchange, SR 9/I-95 crosses below an elevated section of Lantana Road. SR 9/I-95 is a SIS designated highway, as well as an emergency evacuation route.

Within the project limits, Lantana Road is primarily a four-lane urban principal arterial under the jurisdiction of Palm Beach County, that is aligned west to east, with two through lanes in each direction. At the interchange location, Lantana Road is elevated over SR 9/I-95 and the SFRC/CSX Railroad. There is one dedicated left-turn lane in each direction to access the SR 9/I-95 on-ramps and two through lanes in each direction. A single free-flow right-turn lane is also provided in both eastbound and westbound directions along Lantana Road to serve the SR 9/I-95 on-ramps. Sidewalks are provided along both sides of Lantana Road; however, bicycle lanes do not exist. The segment of Lantana Road from SR 9/I-95 to SR 5/US-1 is designated as an emergency evacuation route.

Land use adjacent to the interchange is predominantly commercial with some industrial, institutional and residential uses. The adjacent signalized intersections within the project limits are: High Ridge Road west of SR 9/I-95 southbound ramps, and Shopping Center Drive and Andrew Redding Road east of SR 9/I-95 northbound ramps.

The proposed improvements will include operational and safety improvements to the Interchange including capacity improvements along Lantana Road, additional turning lanes at the SR 5/I-95 ramp terminal intersections and signal improvements. The project will also include improvements to sidewalks, ADA ramps, guide signs, and designated bicycle lanes. The project location map is shown in **Figure 1-1**.

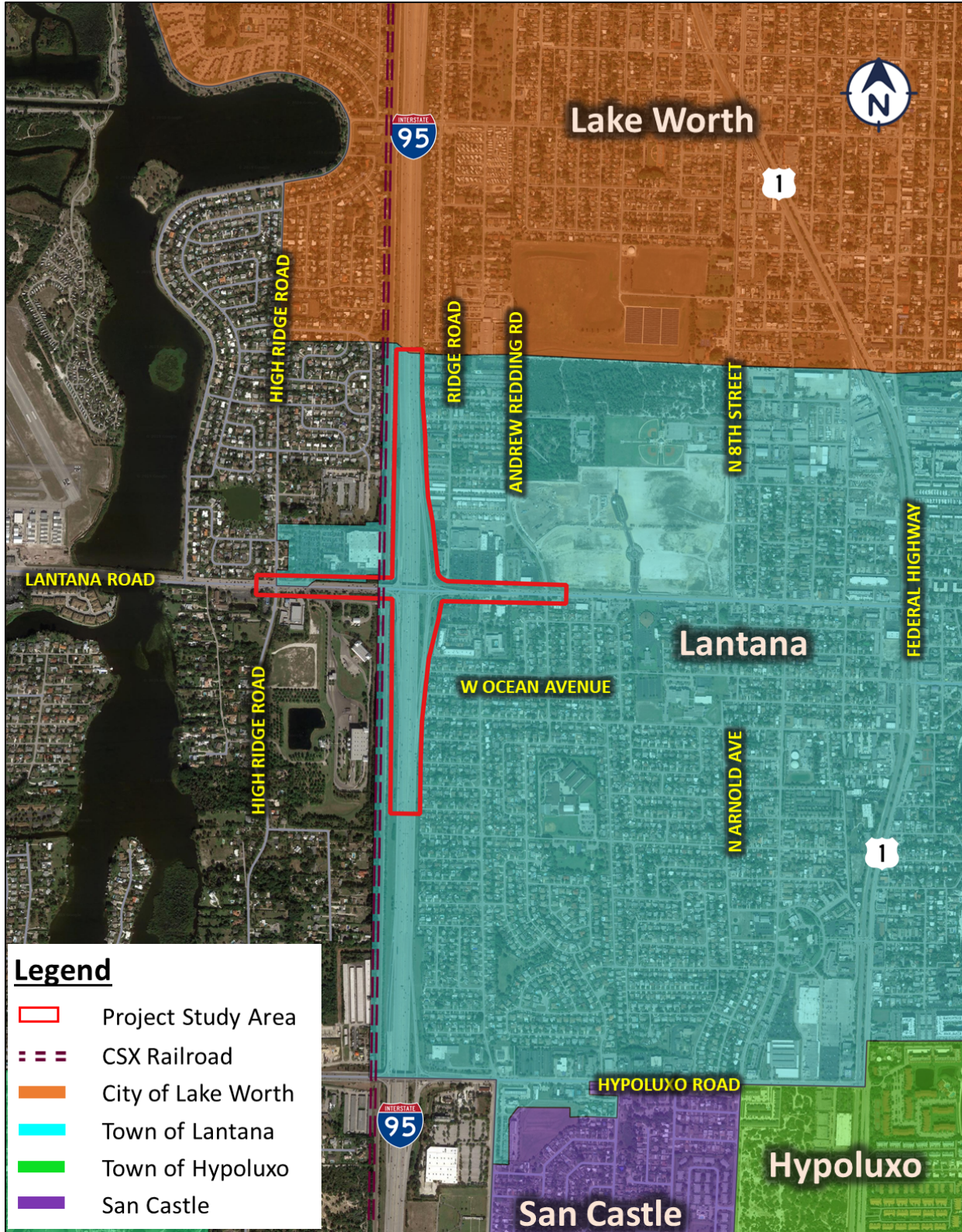


Figure 1-1 Project Location Map

1.3 PURPOSE AND NEED

The primary purpose of this interchange project is to improve the local and regional transportation network while also providing enhanced multimodal interrelationships at the SR 9/I-95/Lantana Road interchange. Additional features that will be improved include capacity and transportation demand, safety, and emergency evacuation. The study will evaluate alternatives that eliminate traffic spillback onto SR 9/I-95, enhance interchange operations and safety, reduce congestion, while providing for multimodal accommodations at this interchange location. The study will also consider accommodation for potential extension of I-95 Managed Lanes through Palm Beach County. The needs for this project are further described in the following sections:

1.3.1 Transportation Network

Lantana Road is a county roadway (CR 812) that provides access to the Town of Lantana and Hypoluxo Island via East Ocean Avenue (Lantana) Bridge. To the west, Lantana Road provides access to the Palm Beach County Park/Lantana Airport and the City of Atlantis. Although Lantana Road is not a designated road in the state's SIS, SR 9/I-95 is a part of the SIS system. The SIS includes Florida's important transportation facilities that support the State's economy and mobility. Improved interchange operations at Lantana Road will help to reduce traffic spillback onto I-95 thereby enhancing connectivity among the local and regional network.

1.3.2 Multimodal Interrelationships

The SR 9/I-95 at Lantana Road interchange accommodates east-west sidewalks on the north and south sides of Lantana Road, from High Ridge Road to Shopping Center Drive, extending beyond both intersections. Bicycle lanes are not provided in both directions along Lantana Road within the project limits. The TPA Master Comprehensive Bicycle Transportation Plan (MCBTP) includes recommendations to improve bicycle facilities throughout Palm Beach County. The MCBTP recommends a "Detailed Corridor Study" along Lantana Road. Additionally, the MCBTP designates segments of High Ridge Road as "Bike Level of Service (LOS) Threshold Met" and "Shoulder Candidate." As part of the study, provision of bike lanes would be evaluated along Lantana Road.

Four schools are located within approximately one mile of the interchange: Barton Elementary School, Lantana Elementary School, Lantana Middle School, and Palm Beach Maritime Academy. There are no Palm Tran transit bus stops within the project limits. However, bus stops are located on Lantana Road west of High Ridge Road and east of Andrew Redding Road. Adding improvements to bicycle and pedestrian facilities at the intersections within the Study Area will increase the safety of the local community pedestrian users traveling the corridor.

1.3.3 Capacity and Transportation Demand

The SR 9/I-95 southbound ramps within the Study Area currently operate at an overall LOS E during the A.M. peak hours, while the northbound ramps operate at a LOS C. During the P.M. peak hours, the southbound ramps operate at LOS D, and the northbound ramps operate LOS C. If no improvements are made to the I-95/Lantana Road interchange, it is forecasted that by 2045, both the southbound and northbound ramps will operate at LOS F for both the A.M. and P.M. peak hours.

Due to the current need to increase capacity, the proposed interchange improvements are included in the Palm Beach County TPA 2040 Long Range Transportation Plan (LRTP) as part of the 2020-2040 Desires Plan. Funding for Design (Preliminary Engineering and PD&E) are planned to be available in 2026-2030 and Construction in 2031-2040. The interchange improvements are also included in the SIS Cost Feasible Plan 2024-2040. The interchange is also included in the I-95 Interchange Master Plan.

1.3.4 Safety

Crash data from 2014 to 2018 for SR 9/I-95 (Roadway ID: 93220000) from south of Lantana Road to the north of Lantana Road, SR 9/I-95 Ramps at Lantana Road (Roadway ID: 93220037, 93220038, 93220039, and 93220040), and Lantana Road (Roadway ID: 93530000) from High Ridge Road to Andrew Redding Road (MP 2.80 to MP 3.50) was obtained from the FDOT State Safety Office GIS (SSOGis) Query Tool on the Traffic Safety Web Portal. Based on the crash analysis, 313 crashes occurred on the SR 9/I-95 mainline, 157 crashes occurred on the SR 9/I-95 ramps at Lantana Road interchange and 172 crashes occurred on Lantana Road within the study area from 2014 to 2018. The predominant crash types that occurred within the study area were rear-end collisions, sideswipe collisions, and angled collisions. Crashes of these types are typically attributed to congested conditions along the arterials and interchange ramps and terminals. As such, providing capacity improvements for different modes of transportation within the study area will help to improve safety by alleviating congestion.

1.3.5 Emergency Evacuation

Based on Palm Beach County's Evacuation Routes and Zones Map, Lantana Road is classified as an evacuation route from SR 5/US-1 to SR 9/I-95. Therefore, improvements to the interchange of I-95 and Lantana Road, along with improvements to nearby intersections, will decrease evacuation times by increasing connectivity between eastern and western towns/cities and SR 9/I-95. Additionally, emergency response times will be decreased by the proposed improvements due to the enhanced mobility.

1.4 PLANNED AND ONGOING ADJACENT PROJECTS

Transportation plans from the state, county, city and municipal level were reviewed to identify projects that impact the SR 9/I-95 at Lantana Road PD&E Study Area. Transportation plans that were reviewed as part of this study include: FDOT District 4 Five Year Work Program, Palm Beach County TPA 2040 LRTP, Palm Beach County Transportation Improvement Program (TIP) and Palm Beach County MCBTP. A number of planned or ongoing projects were identified within the influence area of the SR 9/I-95 at Lantana Road PD&E Study. **Table 1-1** below provides a summary of these projects.

Table 1-1 Ongoing and Adjacent Projects			
Project #	Project Name	Work Mix	Fiscal Year
427516-2	SR 9/I-95 From Gateway Boulevard to Lantana Road	Resurfacing	2020
444202-1	I-95 Managed Lanes from Linton Blvd. to 6th Ave	PD&E Study	2024
413257-1	SR 9/I-95 at Hypoluxo Road	PD&E	2020
436963-1	SR 9/I-95 at 6th Avenue South	PD&E / P.E.	2020
444340-1	SR 9 @ 6th Avenue South	Landscaping	2022
20230001	Lantana Road from Hagen Ranch to SR 9/I-95	Resurfacing	2023
N/A	Water Town Commons Development	Mixed-Use Development	Ongoing

Lantana Road is also included as a priority corridor in the Palm Beach County adopted MCBTP, with recommendations for bicycle lanes along Lantana Road from Jog Road to Dixie Highway.

2.0 ALTERNATIVES CONSIDERED

The alternatives considered as part of the SR 9/I-95 at Lantana Road PD&E Study include a No-Action Alternative, Transportation System Management & Operations (TSM&O) Alternative, and three Build Alternatives. The Alternatives are described below:

2.1 NO-ACTION ALTERNATIVE

The No-Action Alternative assumes no proposed improvements to the study intersection and serves as a baseline for comparison against the Build Alternatives. It will, however, include on-going construction projects and all funded or programmed improvements scheduled to be opened to traffic in the analysis years being considered. These improvements must be part of the Department's adopted Five-Year Work Program, Palm Beach TPA cost feasible LRTP, transportation elements of Local Government Comprehensive Plans (LGCP), or developer-funded transportation improvements specified in approved development orders.

2.2 TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS (TSM&O)

The TSM&O Alternative considers minor improvements to enhance operations and safety without the addition of through lanes. TSM&O includes low-cost improvements such as adding turn lanes at intersections, adjusting signal phasing and timings, and considering opportunities to enhance alternative travel modes. It also includes implementation of intelligent transportation systems (ITS) technologies. The Build Alternatives developed for this study will also incorporate TSM&O improvements. The proposed TSM&O improvements to be incorporated as part of the Build Alternatives include:

- Incident Management Closed-Circuit Television (CCTV) Cameras
- Wrong Way Detection Technology
- Vehicle Detection System
- Dynamic Message Signs on Lantana Road east and west of SR 9/I-95

TSM&O improvements will only alleviate some operational, geometric and safety deficiencies along some portions of the Study Area. Their implementation alone does not meet the purpose and need for this project. TSM&O improvements are only viable in combination with the Build Alternatives that are discussed in the next section of this report.

2.3 BUILD ALTERNATIVE 1

Build Alternative 1 considered for this Study is generally based on the preliminary conceptual design recommended as part of the I-95 Interchange Master Plan Study. This alternative

maintains the existing Tight Urban Diamond Interchange (TUDI) configuration and provides the following improvements to accommodate the design year traffic demand (See **Figure 2-1**):

- Widen Lantana Road to provide 3 lanes in each direction from High Ridge Road to Andrew Redding Road.
- Widen the existing Lantana Road bridge over I-95 and the two ramp bridges.
- Provide triple right-turn lanes and dual left-turn lanes for the SR 9/I-95 northbound and southbound off-ramps.
- Provide dual eastbound and westbound right-turn lanes onto I-95 southbound and northbound on-ramps, respectively.
- Eliminate eastbound left-turn movement and provide directional median opening at the Sunset Road intersection.
- Provide exclusive southbound and northbound right-turn lane along High Ridge Road and extend the EB left urn storage from 200-ft to 300-ft.
- Widen right-turn lane at Sunset Road to accommodate WB62FL Design Vehicles.
- Provide 7-ft buffered bicycle lanes and 6-ft sidewalks along Lantana Road in both directions.

These improvements are necessary to enhance the operations of the intersections within the interchange influence area. The proposed improvements under this alternative will also require right of way impacts to 9 commercial properties along Lantana Road.

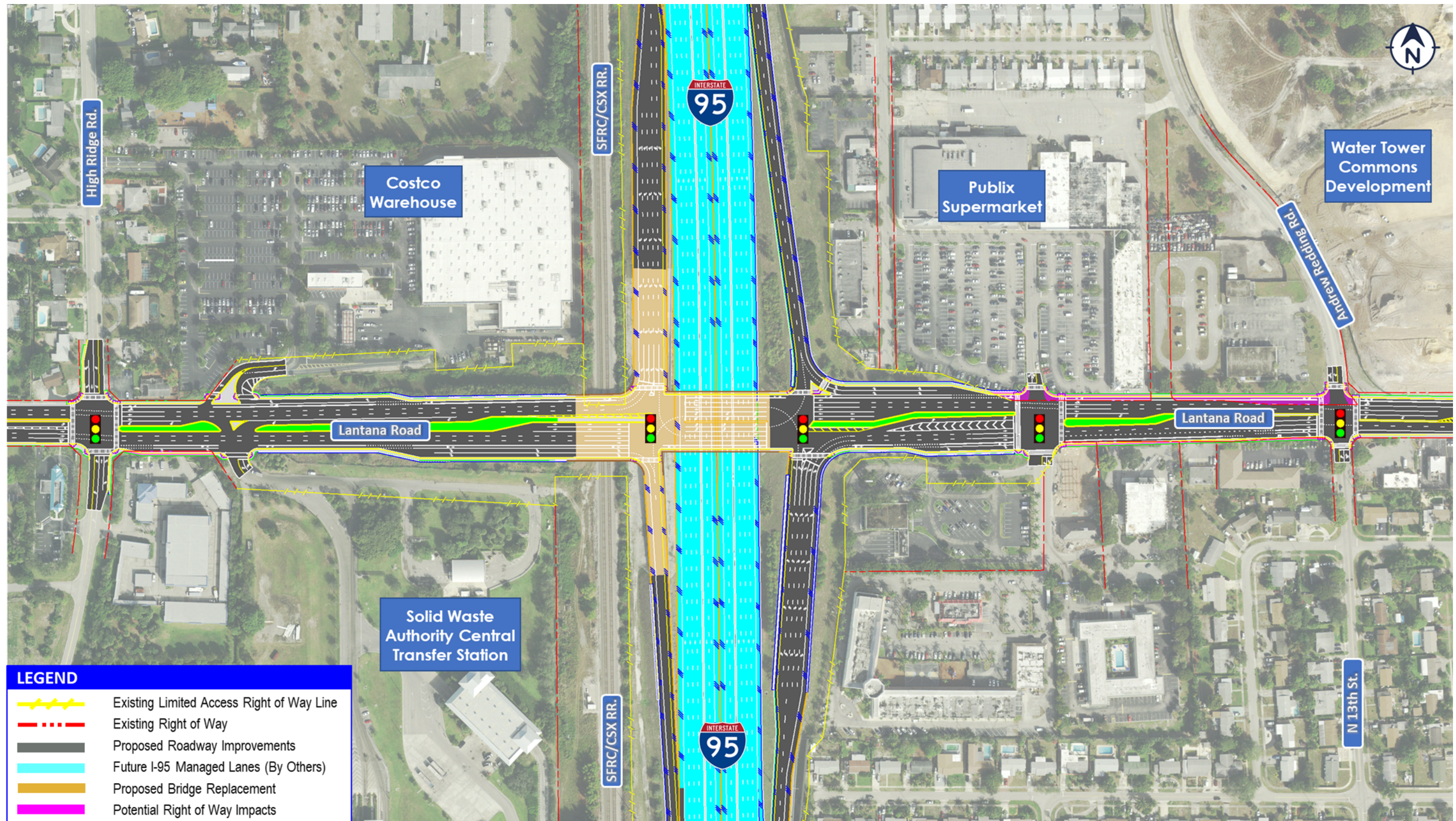


Figure 2-1 Build Alternative 1: Tight Urban Diamond Interchange (TUDI)

2.4 BUILD ALTERNATIVE 2

Build Alternative 2 reconfigures the existing Tight Urban Diamond Interchange into a Diverging Diamond Interchange (DDI) configuration (See **Figure 2-2**). The diverging diamond concept requires drivers to briefly cross to the left, or opposite side of the road at carefully designed crossover intersections. Drivers travel for a short distance, then cross back to the traditional or right side of the road. This unconventional design allows movements for the left and right-turns to and from the I-95 ramps onto Lantana Road without crossing the path of opposing traffic. The crossover is made at the signal where the opposing traffic flows split the signal green time. The major advantage of this type of interchange is that the left-turning vehicles do not require a signal phase which makes this a two-phased signal system with more green time for the opposing traffic. In addition, the DDI has fewer conflict points (i.e. 14 for DDI, 26 for TUDI) resulting in significant safety and operational improvement at the interchange. The following improvements are proposed to accommodate the design year traffic demand under Build Alternative 2:

- Widen Lantana Road to provide 3 lanes in each direction between High Ridge Road and Andrew Redding Road.
- Replace the existing single Lantana Road bridge over I-95 and SFRC/CSX Railroad with two separate bridges over SR 9/I-95 and SFRC/CSX Railroad.
- Replace the existing ramp bridges for the southbound on and off ramps with embankment and MSE walls.
- Provide dual right-turn lanes and dual left-turn lanes for the SR 9/I-95 northbound and southbound off-ramps.
- Provide dual eastbound and westbound right-turn lanes from Lantana Road onto I-95 southbound and northbound on-ramps, respectively.
- Provide dual eastbound and westbound left-turn lanes from Lantana Road onto the I-95 northbound and southbound on-ramps.
- Eliminate the eastbound left-turn, northbound left-turn and thru movements and provide a directional median opening at the Sunset Road intersection.
- Widen westbound right-turn lane at Sunset Road to accommodate WB62FL Design Vehicles.
- Provide an underpass road that connects Sunset Road and the existing Solid Waste Authority (SWA) service road underneath the reconstructed Lantana Road Bridge over SFRC/CSX Railroad.
- Provide exclusive southbound and northbound right-turn lane along High Ridge Road.

- Provide 7-ft buffered bicycle lanes and 6-ft sidewalks along Lantana Road in both directions.

These improvements are necessary to enhance the operations of the intersections within the interchange influence area. The proposed improvements under this alternative will also require right of way impacts to 6 commercial properties along Lantana Road.

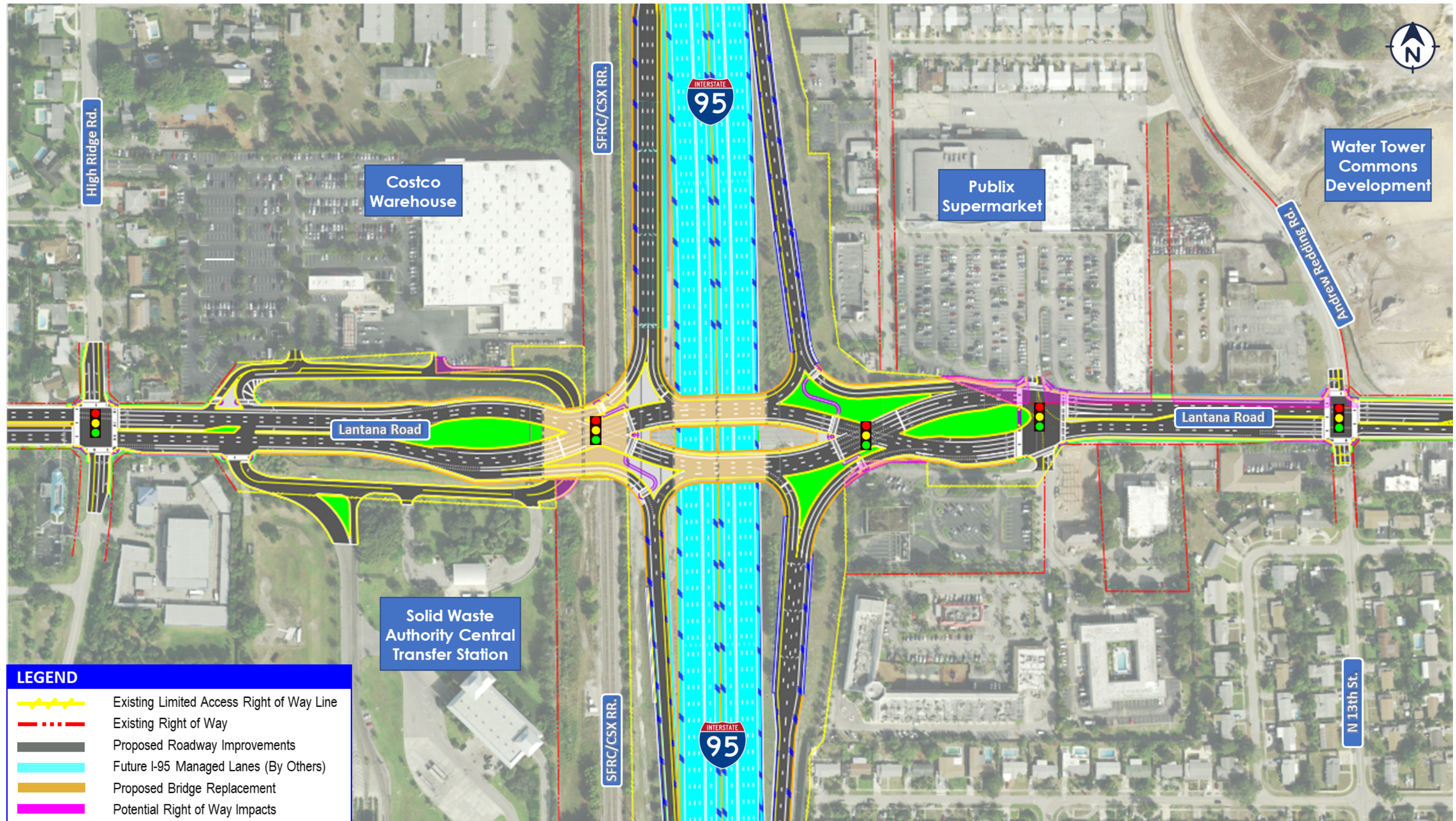


Figure 2-2 Build Alternative 2: Diverging Diamond Interchange

2.5 BUILD ALTERNATIVE 3

Build Alternative 3 reconfigures the existing Tight Urban Diamond Interchange into a Single Point Urban Interchange (SPUI) configuration (See **Figure 2-3**). The SPUI concept consolidates the two intersections of a TUDI into one single intersection. This allows left-turning traffic from both directions of the intersecting roadways to turn simultaneously without crossing the path of the opposing left-turns. Since traffic passing through the SPUI is controlled by a single signal, vehicles can clear the intersection much more quickly compared to a TUDI. The major advantages of SPUI are improved operational efficiency and safety. This can be attributed to the single, three-phase traffic signal and less conflict points compared to the TUDI. In addition, the SPUI also allows for wider turns, easing movement for heavy trucks. The following improvements are proposed to accommodate the design year traffic demand under Build Alternative 3:

- Widen Lantana Road to provide 3 lanes in each direction from High Ridge Road to Andrew Redding Road
- Replace the existing Lantana Road bridge over I-95 and the two ramp bridges
- Provide triple right-turn lanes and dual left-turn lanes for the SR 9/I-95 northbound and southbound off-ramps.
- Provide dual eastbound and westbound right-turn lanes onto I-95 southbound and northbound on-ramps, respectively.
- Provide dual eastbound and westbound left-turn lanes from Lantana Road to the I-95 southbound and northbound on-ramps, respectively.
- Provide dual eastbound and westbound left-turn lanes from Lantana Road to the I-95 southbound and northbound on-ramps, respectively.
- Eliminate the eastbound left-turn, northbound left-turn and thru movements and provide a directional median opening at the Sunset Road intersection with an underpass access road.
- Provide exclusive southbound and northbound right-turn lane along High Ridge Road.
- Widen right-turn lane at Sunset Road to accommodate WB62FL Design Vehicles.
- Provide 7-ft buffered bicycle lanes and 6-ft sidewalks along Lantana Road in both directions.

These improvements are necessary to enhance the operations of the intersections within the interchange influence area. The proposed improvements under this alternative will also require right of way impacts to 9 commercial properties along Lantana Road.

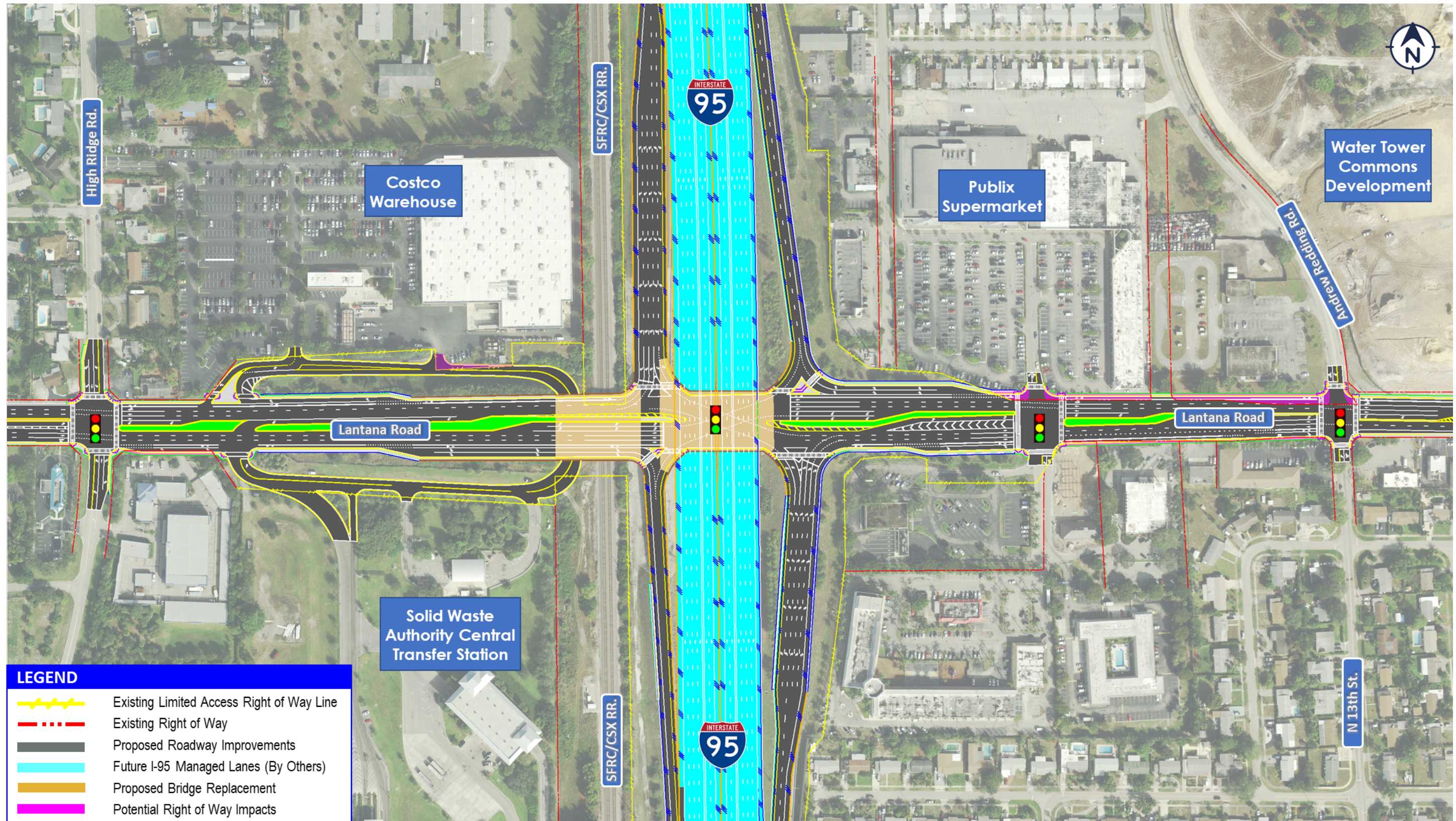


Figure 2-3 Build Alternative 3: Single Point Urban Interchange (SPUI)

2.6 PREFERRED ALTERNATIVE

The Preferred Alternative, as illustrated in **Figure 2-4** is Build Alternative 2 – Diverging Diamond Interchange. The diverging diamond concept requires drivers to briefly cross to the left, or opposite side of the road at carefully designed crossover intersections. Drivers travel for a short distance, then cross back to the traditional or right side of the road. This unconventional design allows free-flow movements for the left and right-turns to and from the I-95 ramps onto Lantana Road without crossing the path of opposing traffic. The crossover is made at the signal where the opposing traffic flows split the signal green time. The major advantage of this type of interchange is that the left-turning vehicles do not require a signal phase which makes this a two-phased signal system with more green time for the opposing traffic. In addition to the interchange reconfiguration, the following improvements will be implemented with the preferred alternative:

- Widen Lantana Road to provide 3 lanes in each direction between High Ridge Road and Andrew Redding Road.
- Replace the existing single Lantana Road bridge over I-95 and SFRC/CSX Railroad with two separate bridges over SR 9/I-95 and SFRC/CSX Railroad.
- Replace the existing ramp bridges for the southbound on and off ramps with embankment and MSE walls.
- Provide dual right-turn lanes and dual left-turn lanes for the SR 9/I-95 northbound and southbound off-ramps.
- Provide dual eastbound and westbound right-turn lanes from Lantana Road onto I-95 southbound and northbound on-ramps, respectively.
- Provide dual eastbound and westbound left-turn lanes from Lantana Road onto the I-95 northbound and southbound on-ramps.
- Eliminate the eastbound left-turn, northbound left-turn and thru movements and provide a directional median opening at the Sunset Road intersection
- Provide exclusive southbound and northbound right-turn lane along High Ridge Road.
- Widen westbound right-turn lane at Sunset Road to accommodate WB62FL Design Vehicles.
- Provide 7-ft buffered bicycle lanes and 6-ft sidewalks along Lantana Road in both directions.
- Provide an underpass road that connects Sunset Road and the existing Solid Waste Authority (SWA) service road underneath the reconstructed Lantana Road Bridge over SFRC/CSX Railroad.

- Provide ITS improvements including Arterial Dynamic Message Signs (ADMS), Surveillance and verification CCTV cameras and Wrong way detection system for the interchange ramps.

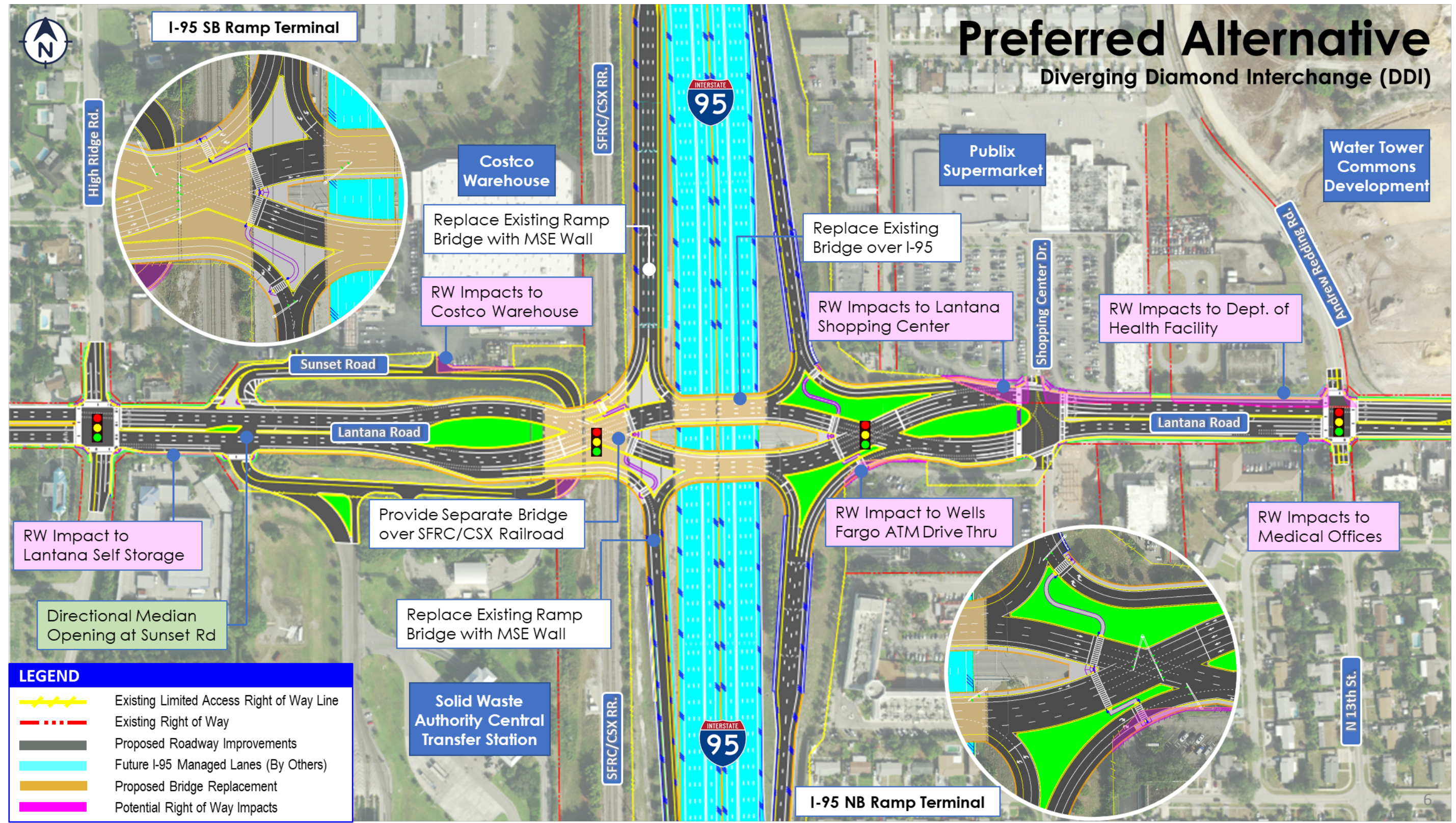


Figure 2-4 Conceptual Layout for Preferred Alternative

3.0 EXISTING CONDITIONS

3.1 LAND USE CLASSIFICATIONS

The existing land use types within the project Study Area were identified through the review and interpretation of the most recent version (updated November 14, 2018) of the South Florida Water Management District's (SFWMD) Land Cover Land Use 2014-2016 Geographic Information System (GIS) layer, which is an update of the Land Cover Land Use data from 2008-2009. The existing land use types are categorized in this report using the Florida Land Use, Cover and Forms Classification (FLUCCS) codes.

The SR 9/I-95 interchange at Lantana Road and the Lantana Road corridor are designated as transportation land use (roads and highways). The area west of SR 9/I-95 is primarily residential but includes a Costco to the north, and a solid waste disposal site to the south of Lantana Road. The area to the east of SR 9/I-95 is primarily residential with two shopping centers, and an area of disturbed land which is currently being converted to a town center that will include apartments and shopping centers. Existing land use within a 500-foot buffer surrounding the project Study Area is depicted in **Figure 3-1**, and upland habitats/land uses, including acreage, are described in **Section 3.1.1**.

3.1.1 Upland Habitats and Land Uses

Due to the developed and urbanized nature of the project area, there were no natural habitat types identified within the proposed corridor. The existing upland land uses are identified and briefly described below:

FLUCCS Code/Description

1110 – Residential, Low Density: This category includes fixed single-family homes with less than two dwelling units per acre (15.88 acres).

1210 – Residential, Medium Density: This category includes fixed single-family homes with two to five dwelling units per acre (73.89 acres).

1330 – Residential, High Density: This category includes multiple low-rise dwelling units, two stories or less (9.09 acres).

1400 – Commercial and Services: This category includes buildings that support a mix of commercial and retail services, including shopping centers and commercial resorts, as well as all associated secondary structures such as sheds, warehouses, office buildings, driveways, parking lots and landscaped areas (18.31 acres).

1411 – Shopping Centers: This category includes various retail structures, including strip malls, single unit department stores and unconnected buildings for multiple units, as well as driveways parking lots and other associated structures and facilities (24.97 acres).

1700 – Institutional: This category includes a broad range of facilities including educational, religious, medical/health care, governmental, correctional, commercial childcare and others (7.49 acres).

1710 – Educational Facilities: This category includes all public and private, schools, colleges, universities and training centers, as well as all supporting facilities and features functionally related to the educational institution (0.97 acres).

1900 – Open Land: This category includes open, undeveloped lands within urban areas which tend to have transitional or uncertain land uses (2.33 acres).

7400 – Disturbed Land: This category is the general Level 2 class for barren and/or disturbed land in upland areas. These are areas where soil/substrate has been altered or removed by human activity (11.65 acres). The area within the proposed corridor, identified as disturbed land, also includes the Bureau of Administrative Reviews, a government building. Government Buildings are typically defined by FLUCCS code 1750; however, the most recent SFWMD Land Use Land Cover data (November 2018), does not have this area identified as a government building.

8140 – Roads and Highways: This category includes highways exceeding 100-feet in width, with 4 or more lanes and median strips, and is intended to indicate major transportation corridors. Also included in this category, are interchanges, right of way, highway patrol facilities, maintenance and service facilities and associated parking areas (63.89 acres).

8350 – Solid Waste Disposal: This category includes sanitary landfills, dumps and other waste disposal areas (28.10 acres).

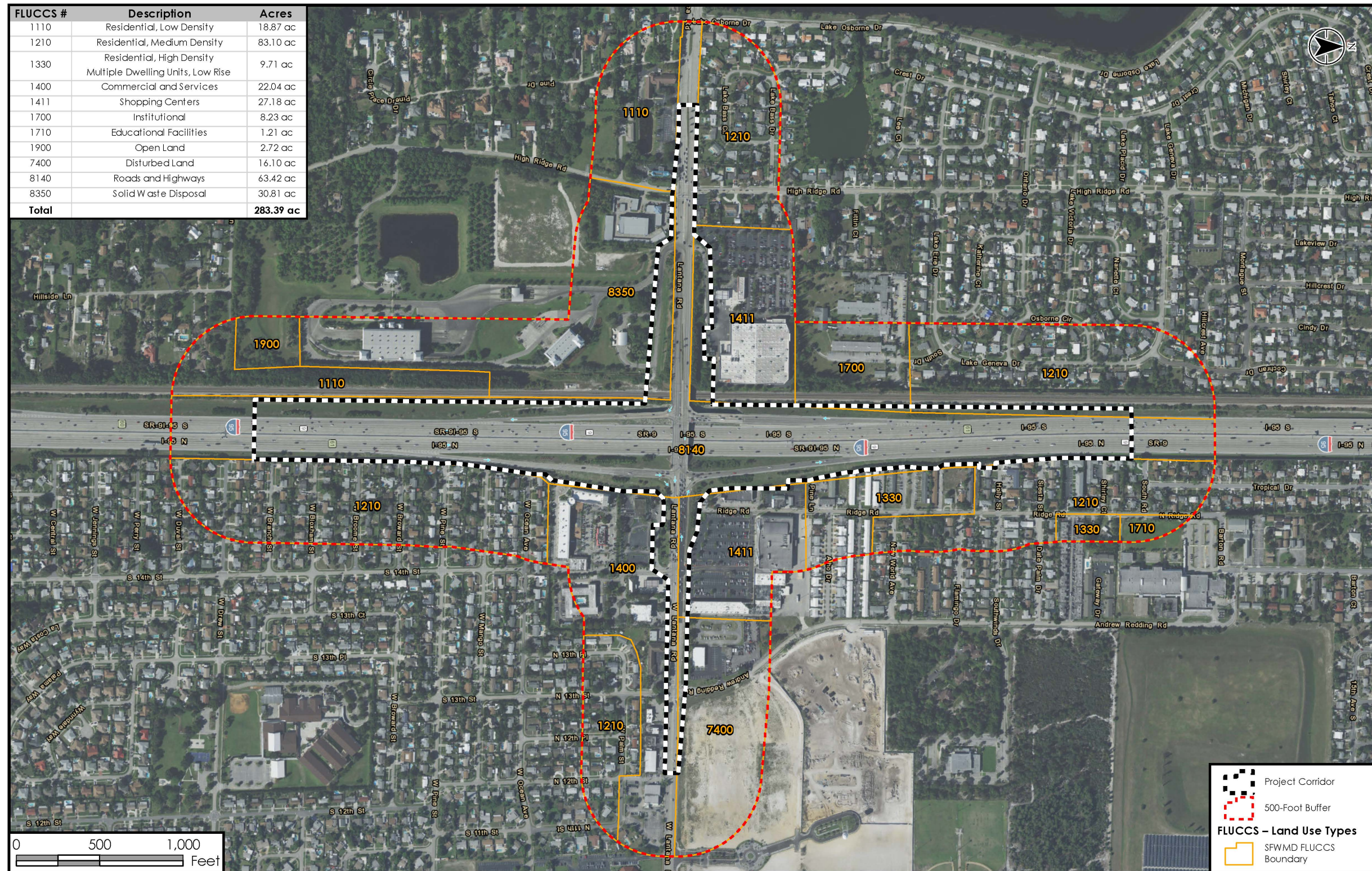


Figure 3-1 FLUCCS Land Use Map

3.2 SOIL CLASSIFICATIONS

The soils within the Study Area were identified using maps and definitions determined by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) and utilizing the most recent version (updated March 21, 2019) of the Soil Survey Geographic (SSURGO) Database for Florida GIS layer.

The SR 9/I-95 interchange at Lantana Road and Lantana Road corridor contain primarily St. Lucie-Paola-Urban Land Complex, which accounts for approximately 56% of the Study Area within a 500-foot buffer. These soil types indicate highly disturbed (mechanically altered and shaped) soils which would be expected as the majority of this Study Area consists of constructed roadways and urban development. Two hydric soil types were identified within the 500-foot buffer, Basinger Fine Sand and Basinger/Myakka Sands, Depressional. However, through aerial interpretation and field review, it was determined that these areas have been partially developed and do not exist in their natural, unadulterated condition. The NRCS Soils are further described in **Table 3-1** and are depicted over a project aerial in **Figure 3-2**.

Table 3-1 NRCS Soil Types within 500 Feet of the Project Study Area				
Mapping Unit	Soil Type Description	Hydric Y/N	Drainage	Percentage of Project Area
4	Arents-Urban Land Complex, 0 to 5% Slopes	No	Somewhat Poorly Drained	2.99
6	Basinger Fine Sand, 0 to 2% Slopes (Altered)	Yes	Poorly Drained	0.60
8	Basinger and Myakka Sands, Depressional (Altered)	Yes	Very Poorly Drained	0.90
18	Immokalee Fine Sand, 0 to 2% Slopes	No	Poorly Drained	2.30
21	Myakka Fine Sand, 0 to 2% Slopes	No	Poorly Drained	23.25
22	Myakka-Urban Land Complex	No	Poorly Drained	3.45
33	Pomello Fine Sand, 0 to 5% Slopes	No	Moderately Well Drained	4.05
35	Quartzipsammets, Shaped, 0 to 5% Slopes	No	Well Drained	2.39
41	St. Lucie-Paola-Urban Land Complex, 0 to 8% Slopes	No	Excessively Drained	56.57
48	Urban Land	Unranked		3.50

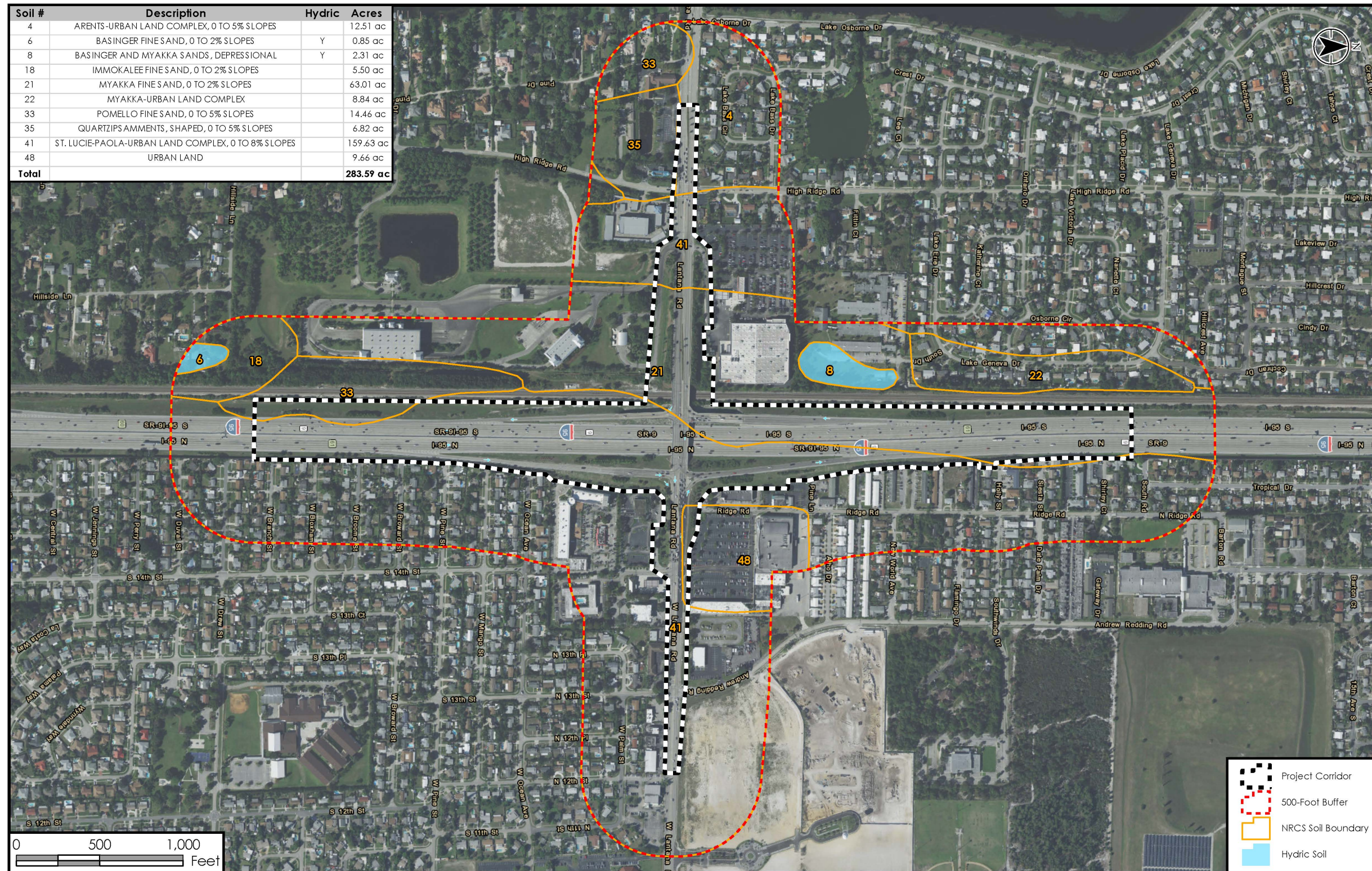


Figure 3-2 NRCs Soils Map

4.0 PROTECTED SPECIES AND HABITAT EVALUATION

Agency coordination to obtain protected species information for this project occurred through the Efficient Transportation Decision Making (ETDM) Programming Screening (Project #14338). Members of the ETAT provided input and comments pertaining to threatened, endangered and protected species within the project area. The ETDM review occurred between November 6, 2017 and December 21, 2017. The ETAT representatives from the Florida Fish and Wildlife Conservation Commission (FWC) and the U.S. Fish and Wildlife Service (USFWS) assigned the project a Degree of Effect (DOE) of “*Minimal*” for Wildlife and Habitat as there are no significant wildlife resources within the project Study Area, and minimal impacts to wildlife resources are anticipated. The Florida Department of Agriculture and Consumer Services (FDACS) assigned a DOE of “*none*” as there is no involvement with any state or federally listed plant species.

4.1 METHODOLOGY

In accordance with Section 7(a)(2), of the ESA of 1973, as amended, the FDOT PD&E Manual Part 2, Chapter 16 (Protected Species and Habitat) and Chapter 68 of the Florida Administrative Codes (FAC), the project Study Area was evaluated for the potential occurrence of federal and state protected plant and animal species and their habitats. In addition, literature reviews, agency database searches and a habitat field survey were conducted to identify protected species and critical habitat that could be potentially present within the Study Area. Literature reviews and database searches included the following:

- ETDM Summary Report for Project # 14338
- Florida Natural Areas Inventory (FNAI) Tracking List, Palm Beach County (2019)
- FNAI Field Guide to the Rare Plants and Animals of Florida Online (2001)
- FWC Florida’s Endangered and Threatened Species List (December 2018)
- FWC Fish and Wildlife Research Institute Terrestrial Resources GIS Data
- FWC Eagle Nest Locator Database (2017)
- USFWS Listed Species in Palm Beach County, Florida (2019)
- USFWS Information for Planning and Consultation (IPaC) List (2019)
- USFWS Multi-Species Recovery Plan for South Florida (2019)
- Google Earth, Aerial Photographs (2018)

Aerial photography was used to analyze habitat types in the Study Area and the potential presence of any listed plant or animal species. The USFWS Palm Beach County list of threatened and endangered species, and the USFWS IPaC list were used to identify potential occurrence of protected species within the Study Area. This list categorizes species as Federally Endangered

(FE) and Federally Threatened (FT). The FWC threatened and endangered species list includes classifications of species as Federally Endangered (FE), Federally Threatened (FT), State Endangered (E), State Threatened (T) and Species of Special Concern (SSC). The FNAI tracking list includes both plants and animals with special state or federal status that are known to occur, reported to occur or may occur within Palm Beach County.

On September 6, 2019, the project corridor along I-95 and Lantana Road was surveyed for listed plant and wildlife species by project scientists familiar with protected flora and fauna in the area. The survey methodology included meandering pedestrian surveys throughout the project area to identify listed plants and wildlife species including, but not limited to, birds, mammals, reptiles and amphibians. Any observations of listed species, or indicators of their presences (i.e. vocalizations, tracks, scat, burrows or other indicators) within or adjacent to the Study Area were documented and included in this report. Photographs from the field survey can be found in **Appendix A**.

4.2 FEDERALLY LISTED SPECIES INVENTORY AND DESIGNATED HABITAT

Based on the potential availability of suitable habitat and known species ranges, **Table 4-1** lists the federally listed wildlife species with the potential to occur within the project area. Each species is given a rating of low, moderate or high likelihood of occurring within the Study Area as defined below:

- **High** – Preferred habitat exists within the project limits and species have been observed or reported within the project area.
- **Moderate** – Some preferred habitat exists within the project limits, but species have not been observed in the project area.
- **Low** – Preferred habitat is limited or lacking within the project limits and species have not been observed in the project area.

Table 4-1 Federally Listed Species with the Potential to Occur					
Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential	Observed
Mammals					
West Indian Manatee	<i>Trichechus manatus</i>	T	T	Low	No
Birds					
Everglade Snail Kite	<i>Rostrhamus sociabilis plumbeus</i>	E	E	Low	No
Florida Scrub-Jay	<i>Aphelocoma coerulescens</i>	T	T	Low	No
Wood Stork	<i>Mycteria americana</i>	T	T	Low	No
Reptiles					
Eastern Indigo Snake	<i>Drymarchon corais couperi</i>	T	T	Moderate	No

E = Federally Endangered, T = Federally Threatened

Designated Critical Habitat

Critical Habitat is a federally designated, geographic area, essential for the conservation of a threatened or endangered species, that may require special management and protection, but not considered a refuge or sanctuary for the species. Critical Habitat may include an area that is not currently occupied by the species, but that will be needed for its recovery. An area is designated as Critical Habitat after USFWS, or NMFS, publishes a proposed federal regulation in the Federal Register and then receives public comments on the proposal. The final boundaries of the Critical Habitat areas are also published in the Federal Register. Lake Osborne approximately 550 feet west of the project, and Lake Worth Lagoon approximately 4,800 feet to the east of the project are listed as Critical Habitat for the West Indian manatee. However, both waterbodies are located outside of the Study Area. No Critical Habitat was identified within the Study Area, and the Preferred Alternative will not result in the destruction or adverse modification of critical habitat.

Consultation Areas

The project area falls within the Consultation Area for the West Indian manatee, the Florida scrub-jay and Atlantic Coast Plants (**Figure 4-1**). Lake Osborne, to the west and Lake Worth Lagoon to the east of the Study Area provides habitat for the West Indian manatee. Both waterbodies are located outside the project Study Area and neither is anticipated to be affected

by the Preferred Alternative. Due to the extensive urban development in the project Study Area, lack of suitable habitat and no evidence of protected plants or the Florida scrub jay during the field survey (**Section 3.2**), it is reasonable to determine that these species do not inhabit the area.

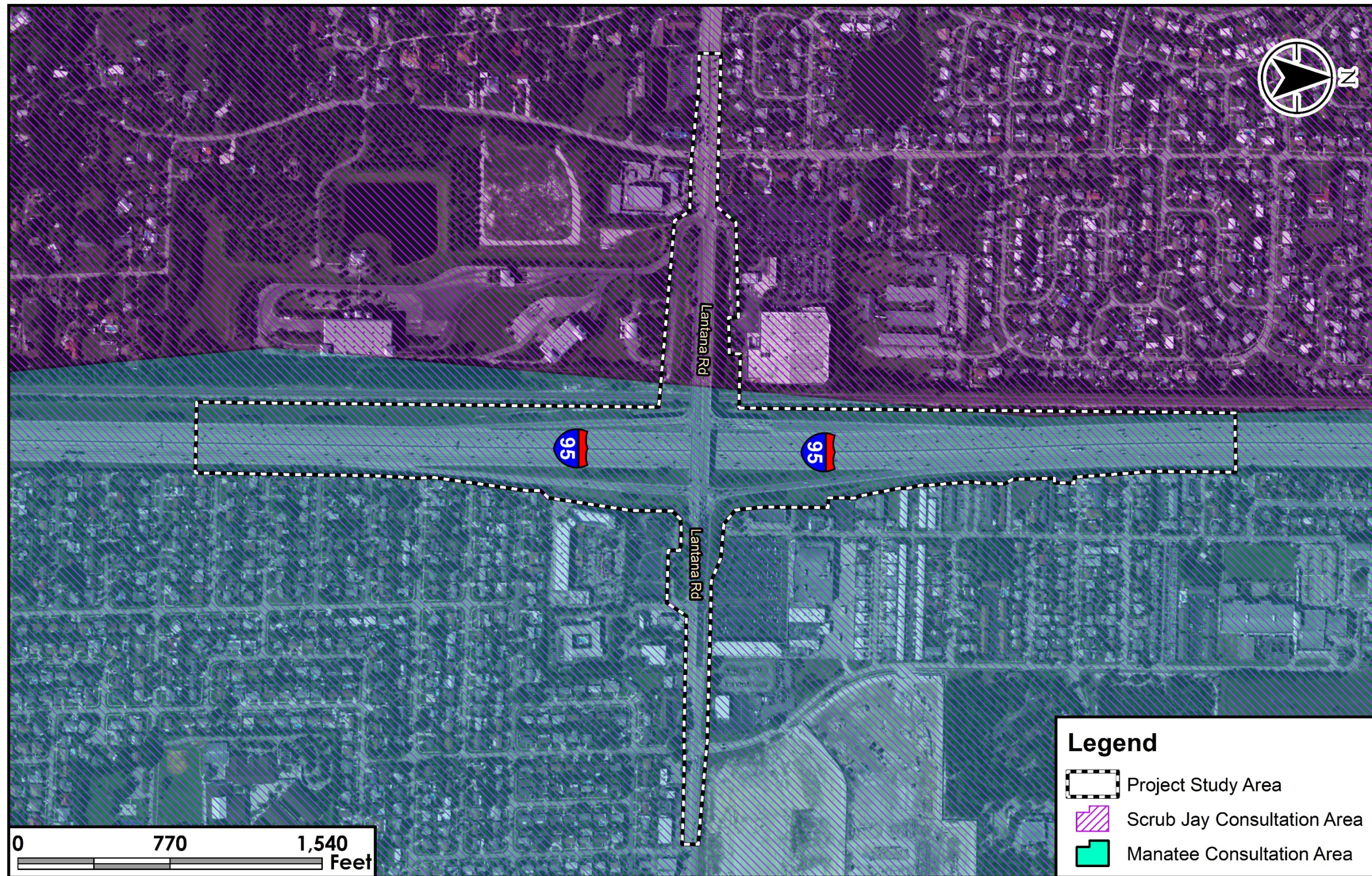


Figure 4-1 USFWS Consultation Areas

4.3 FEDERALLY LISTED SPECIES EFFECT DETERMINATIONS

4.3.1 Mammals

West Indian manatee (*Trichechus manatus*)

The West Indian manatee is federally listed as Threatened throughout its range. The manatee is a large, aquatic, herbivorous mammal. These animals are generally slow swimmers and have no known natural predators. They are known to reach lengths of 10 feet and can weigh over 1,000 pounds. During warm water periods the manatee is typically found in coastal and estuarine waters, bays, rivers, and lakes from Texas to North Carolina. Manatees migrate south to the warm brackish waters of Biscayne and Florida Bay, as well as the Intracoastal Waterway. The primary cause for the decline of manatees is anthropogenic in nature, including collisions with watercraft, and loss of safe and undisturbed habitat due to expanding development. Although no waterbodies or habitat exist within the project Study Area, Lake Osborne approximately 550 feet west of the project, and Lake Worth Lagoon approximately 4,800 feet east of the project, are considered Critical Habitat for the manatee. Because the project does not involve any in-water work and no direct or indirect effects to manatee habitat are anticipated, a species determination of **'No Effect'** was made for the West Indian manatee and its Critical Habitat. This determination is supported by using the USFWS-approved manatee consultation key (2013) (path followed: A>No Effect) (**Appendix B**).

4.3.2 Birds

Everglade Snail Kite (*Rostrhamus sociabilis*)

The project area is located east of the USFWS consultation area for the federally endangered Everglade snail kite. The snail kite inhabits freshwater marshes and the shallow vegetated edges of lakes (natural or man-made) where their prey, the apple snail, can be found. Snail Kites require relatively clear, open, foraging areas in order to visually search for apple snails. Lake Osborne, to the west of the project area is suitable habitat for the snail kite but will not be impacted by the proposed improvements. Within the project area, the maintained right of way has very little natural habitat remaining and there is no open water available for foraging habitat. The regular maintenance of the stormwater management facilities prevents the growth of cattails and shrubby species that could potentially be used as nest sites. No apple snails (*Pomacea* spp.) or apple snail egg masses were observed during the field review. The absence of suitable foraging habitat, coupled with the lack of available nesting habitat within the limits of the project area, are the limiting factors in the potential presence of this species. Therefore, a species determination of **'No Effect'** was made for the Everglade snail kite.

Florida Scrub-Jay (*Apheocoma coeulescens*)

The project area is within the USFWS consultation area for the federally threatened Florida scrub-jay. The Florida scrub-jay is a small bird with a round head and blue and gray coloring. This species lives exclusively in Florida and inhabits fairly open scrub habitat with well-drained sandy soils. No natural scrub habitat exists within the project Study Area, and no individuals were observed during the field survey. Therefore, a species determination of ‘**No Effect**’ was made for the Florida scrub-jay.

Wood Stork (*Mycteria americana*)

The wood stork is listed as Threatened by USFWS and FWC. This is a highly colonial species usually nesting in large rookeries. Wood storks inhabit freshwater and brackish wetlands, primarily nesting in cypress and mangrove swamps. Wood storks can be found foraging in the littoral zone of freshwater marshes, narrow tidal creeks, and flooded tidal pools, as well as roadside ditches and pasturelands. The decline of the wood stork in South Florida is believed to be due primarily to the loss of suitable foraging habitat (SFH). SFH includes wetlands that typically have shallow open water areas that are relatively calm and have a permanent or seasonal water depth between 2 to 15 inches deep. Other shallow non-wetland water bodies are also SFH. SFH supports and concentrates, or is capable of supporting and concentrating, small fish, frogs and other aquatic prey. Examples of SFH include, but are not limited to freshwater marshes, small ponds, shallow, seasonally flooded roadside or agricultural ditches, seasonally flooded pastures, narrow tidal creeks or shallow tidal pools, managed impoundments and depressions in cypress heads and swamp sloughs. Foraging habitats in South Florida have decreased by about 35 percent since 1900 due to the man-made alterations of natural wetland water levels, through the construction of man-made levees, canals and floodgates. As a result, in south Florida, wood storks are increasingly nesting in artificial habitats and repeated nesting failures have occurred despite protection of wood stork rookeries.

The United States Army Corps of Engineers (USACE) and USFWS recognize an 18.6-mile core foraging area (CFA) around all known wood stork colonies in South Florida. According to the FWC Water Bird Locator, the USFWS Wood Stork 5-year Review: Summary and Evaluation (2007), and the USFWS Wood Stork CFA Map for CFAs Active Within 2009-2018 (2019), the project lies within the CFA of four wood stork colonies (**Figure 4-2**). All four colonies were identified as active in 2018 by USFWS. The closest colony is located 8.8 miles away and no wood storks were observed during the field survey. Lake Osborne located approximately 550 feet west of the project area contains SFH, but no SFH was observed within the project area. Based upon the distances to the active colonies and the lack of SFH, the project will have ‘**No Effect**’ on the wood stork. This

determination is supported by using the USFWS-approved consultation key for the wood stork for south Florida (2010) (path followed: A>No Effect) (**Appendix B**).

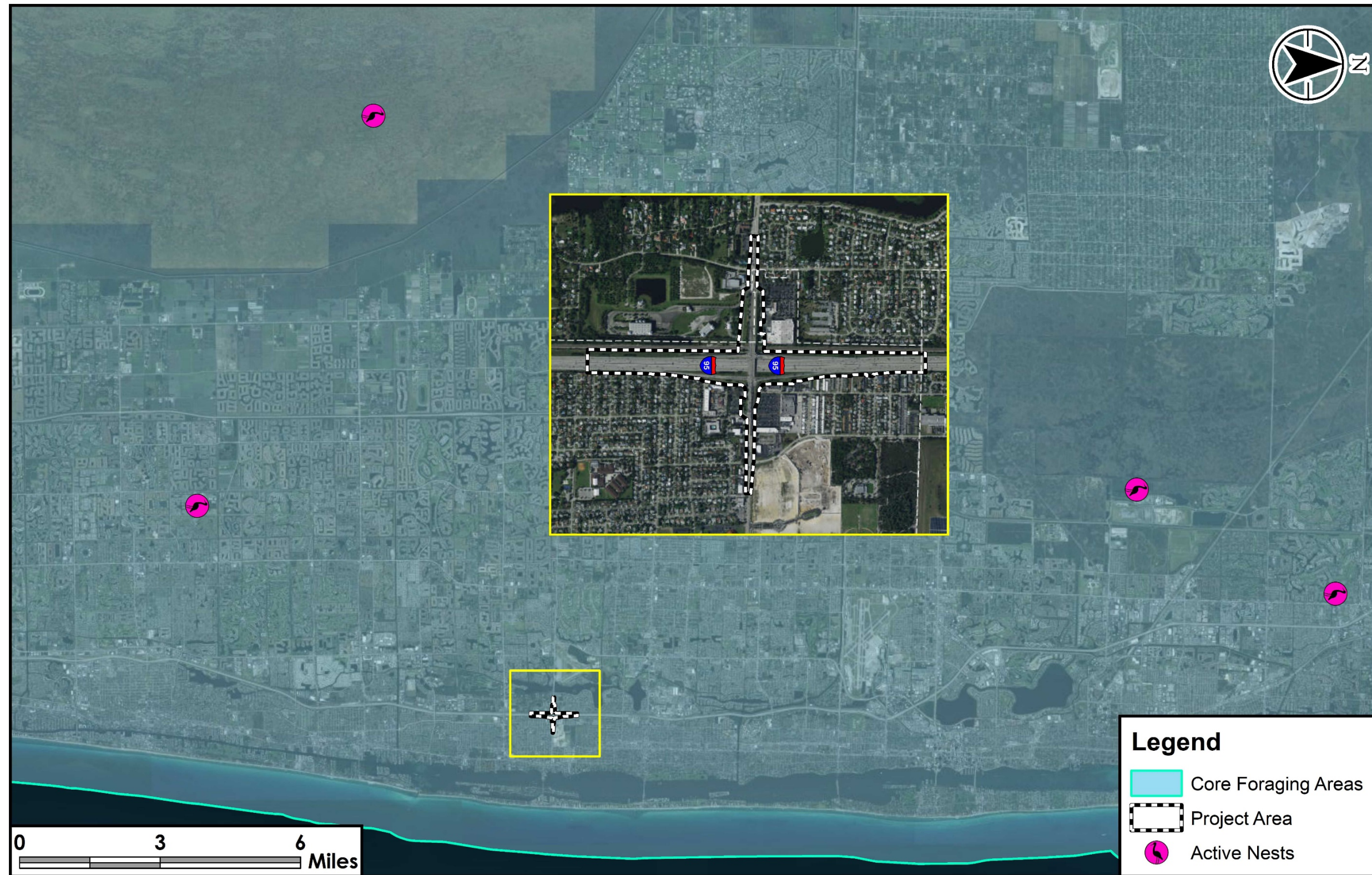


Figure 4-2 Wood Stork Core Foraging Areas

4.3.3 Reptiles

Eastern Indigo Snake (*Drymarchon corais couperi*)

The Eastern indigo snake is federally listed as Threatened due to a decline in the population. This decline is attributed to the loss of habitat and collection by the pet trade. These snakes need large areas of undeveloped land for survival. As habitats become fragmented by roads, indigo snakes will be increasingly vulnerable to highway mortality as they traverse these large territories in search of food or mates. This snake is widespread throughout the state, but relatively uncommon. Formerly classified as a racer, this snake is one of the largest North American snakes and has an average length of about five feet but can attain a length of well over eight feet. The entire body is lustrous black or blue-black except for the chin, throat, and upper lip plates which are reddish-brown. The preferred Florida habitat includes dry glade areas, tropical hammocks, muckland fields, and some flatwoods areas. It will readily utilize disturbed areas and mangrove swamps, as well as upland and even urban habitats. Roadside berms and swales may be potential habitat. This species also commonly inhabits gopher tortoise burrows. The project will impact less than 25 acres of the snake's habitat, but gopher tortoises and their burrows were observed within the project area. To minimize potential adverse impacts to the eastern indigo snake, FDOT will implement the USFWS-approved *Standard Protection Measures for the Eastern Indigo Snake* during construction (Appendix C). A review of the USFWS approved consultation key for the Eastern indigo snake for south Florida (2017) provided a species determination of '**May Affect, Not Likely to Adversely Affect**' for the Eastern indigo snake (path followed: A>B>C>D>E>NLAA) (Appendix B).

4.4 STATE-LISTED SPECIES INVENTORY AND DESIGNATED HABITAT

Based on the potential availability of suitable habitat and known species ranges, **Table 4-2** lists the state listed wildlife species with the potential to occur within the project area. Each species is given a rating of low, moderate or high likelihood of occurring within the project Study Area as defined below:

- **High** – Preferred habitat exists within the project limits and species have been observed or reported within the project area.
- **Moderate** – Some preferred habitat exists within the project limits, but species have not been observed in the project area.
- **Low** – Preferred habitat is limited or lacking within the project limits and species have not been observed in the project area.

Table 4-2 State-Listed Species with the Potential to Occur

Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential	Observed
Birds					
Black Skimmer	<i>Rynchops niger</i>	NL	ST	Low	No
Florida Burrowing Owl	<i>Athene cunicularia floridana</i>	NL	ST	Low	No
Least Tern	<i>Sterna antillarum</i>	NL	ST	Low	No
Little Blue Heron	<i>Egretta caerulea</i>	NL	ST	Low	No
Reddish Egret	<i>Egretta rufescens</i>	NL	ST	Low	No
Roseate Spoonbill	<i>Platalea ajaja</i>	NL	ST	Low	No
Tricolored Heron	<i>Egretta tricolor</i>	NL	ST	Low	No
Reptiles					
Gopher Tortoise	<i>Gopherus polyphemus</i>	CS	ST	High	Yes

ST = State Threatened, CS = Candidate Species, NL = Not Listed

Strategic Habitat Conservation Areas

Strategic Habitat Conservation Areas (SHCA) are defined as regions not in public ownership, which are recommended for protection in order to maintain biological diversity. These SHCA designations are intended to indicate that the existing land use should be maintained in order to conserve state-wide biodiversity. The SHCAs were originally mapped state-wide in association with FWC's *Closing the Gaps in Florida's Wildlife Habitat Conservation System* (Cox, et al., 1994) report. Since 1994, landscape-level habitat changes, transfer of land from private to public ownership, and changes in land use have all altered the applicability of the originally mapped SHCAs. Advances in technological capabilities, revised habitat data, and more extensive species occurrence data facilitated a reassessment of Florida's biodiversity protection status. Additionally, advances in population viability modeling techniques allow for more in-depth examination of wildlife habitat needs that were not available in the previous report. The results of the reanalysis have identified SHCAs for a new selection of focal species, including many species that were in the original report. According to the updated report, *Wildlife Habitat Conservation Needs in Florida: Updated Recommendations for Strategic Habitat Conservation*

Areas (Endries, *et al.*, 2009), and associated GIS data layers, there are no SHCAs within the project corridor.

4.5 STATE-LISTED SPECIES EFFECT DETERMINATIONS

4.5.1 Birds

Black Skimmer (*Rynchops niger*)

The black skimmer, listed by the FWC as Threatened, is a coastal water bird. This species is typically occurs around coastal waters, including beaches, bays, estuaries, sandbars, tidal creeks, and also inland waters such as large lakes, phosphate pits, and flooded agricultural fields. They nest primarily on sandy beaches, small coastal islands, and dredge spoil islands, but also on gravel rooftops. This species is most recognizable by its large bill with extended lower mandible which it uses to skim for food (mostly small fish) from the surface of water bodies while. Black skimmers have been found at large lakes similar to Lake Osborne to the west of the project area, but none were observed within the project area. No direct or indirect effects to Lake Osborne are anticipated, therefore a determination of '**No Effect Anticipated**' was made for the black skimmer.

Florida Burrowing Owl (*Athene cunicularia floridana*)

The burrowing owl is state listed as Threatened. It is a small, diurnal ground-dwelling owl. The adults are spotted and barred with brown and white stripes. They have long legs, a round head and stubby tail. Human activities such as clearing of land for pasture and residential developments have increased its range in Florida but have exposed the owl to additional threats. Intensive cultivation and development of grasslands pose a major threat to this species. The largest concentration of owls now resides in grasslands and lawns of residential, roadway and industrial areas. Nesting typically occurs in burrows dug in the ground in areas sparsely vegetated, sandy soils, including dry prairies and sandhills along with ruderal sites such as airports, ball fields, parks, road right of way and vacant lands. The highly disturbed conditions, compacted fill and routine maintenance within the right of way would make it difficult for these owls to nest in the limited potential habitat that is present within the project area, and no burrowing owls were observed within the project area. Therefore, a species determination of '**No Effect Anticipated**' was made for the Florida burrowing owl.

Least Tern (*Sterna antillarum*)

The least tern is a migratory bird, found throughout almost all coastal Florida from March through October and is listed as State Threatened. It should be noted that the internal United States

breeding population (Texas to North Dakota/Montana and Mississippi River Valley) is federally listed as Endangered by USFWS, but the Florida population is not federally protected. The least tern is the smallest member of the tern and gull family (*Laridae*), which can be identified by its superior agility in the air and its ability to plunge headlong into the water while hunting small fish. Least terns have long pointed wings with forked tails, both characteristics common to North American terns. Breeding adults can be identified by the predominately light gray coloring on the back, with a white belly, black cap and nape and a yellow beak. This species has become accustomed to adoption of artificial nesting sites, particularly gravel rooftops, which has led to increased use of inland locations and increase in populations (FNAI, 2011). While this species may forage in Lake Osborne, located outside of the project area, there is no preferred nesting habitat within the project area and no individuals were observed during the field survey. Therefore, a species determination of '**No Effect Anticipated**' was made for the least tern.

Little Blue Heron (*Egretta caerulea*)

This species is listed as Threatened by FWC. The little blue heron is a medium sized bird with a purple to maroon-brown head and neck, small white patch on the throat and upper neck and a slate blue body. It forages in shallow freshwater, brackish and saltwater habitats and nests in woody vegetation such as cypress, willow, maple, black mangrove and cabbage palm. Potential foraging and nesting habitat exist to the west at Lake Osborne, but not within the project Study Area. There were no individuals, nests or signs of this species observed during the field inspections. Because no impacts to Lake Osborne are anticipated and no foraging or nesting habitat occurs within the project area, a determination of '**No Effect Anticipated**' was made for the little blue heron.

Reddish Egret (*Egretta rufescens*)

This species is listed as State Threatened. The reddish egret has a gray body and chestnut colored plumes on its head, neck and upper body. Their preferred habitat is almost exclusively in coastal areas with nesting occurring on coastal mangrove islands or in Brazilian pepper located on dredge spoil islands. Foraging habitats include shallow water areas (typically less than six inches deep) of variable salinity. They also utilize broad, open marine tidal flats and shorelines with little vegetation. Lake Worth Lagoon, approximately 4,800 feet east of the project area, contains potentially suitable foraging habitat. There were no individuals, nests or signs of this species observed during the field survey. Due to lack of suitable habitat within the project area, a species determination of '**No Effect Anticipated**' was made for the reddish egret.

Roseate Spoonbill (*Platalea ajaja*)

The roseate spoonbill is listed as Threatened by FWC. Spoonbills exhibit bright pink bodies, white necks and unmistakable flat, spoon shaped bills. These birds nest on coastal mangrove islands or in Brazilian pepper on man-made dredge spoil islands near suitable forage habitat. They will also nest in willow heads located in freshwater wetlands and forage in shallow water of varying salinity. Foraging habitat includes marine tidal flats, shallow ponds, coastal marshes, mangrove dominated inlets and pools as well as freshwater marshes and sloughs. Potential foraging habitat exists at Lake Osborne, located outside the project area to the west. There were no individuals, nests or signs of this species observed during the field survey. Because no impacts to Lake Osborne are anticipated and no foraging or nesting habitat occurs within the project area, a species determination of '**No Effect Anticipated**' was made for the roseate spoonbill.

Tricolored Heron (*Egretta tricolor*)

This species is listed as Threatened by FWC. The tricolored heron is a medium sized heron with a long slender neck, two toned body coloration on the head, neck and body along with a white underside. Nesting occurs mostly on mangrove islands or in freshwater willow thickets on islands or over standing water. This heron prefers coastal environments. Foraging areas consist of permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches and the edges of lakes and ponds. Potential foraging and nesting habitat exist outside of the project area at Lake Osborne, approximately 550 feet to the west. No individuals, nests or signs of this species were observed during the field survey. Because no impacts to Lake Osborne are anticipated and no foraging or nesting habitat occurs within the project area, a species determination of '**No Effect Anticipated**' was made for the tricolored heron.

4.5.2 Reptiles

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise is a candidate species for federal listing and is a state-listed Threatened species. The species has been classified as Threatened due to the increased pressures of development and expansion into its remaining habitat throughout the state. This species occurs throughout Florida but prefers sandy, well-drained upland areas. Gopher tortoises inhabit extensive subterranean burrows in dry upland habitats. Vegetation communities where gopher tortoises are found include longleaf pine sandhills, xeric oak hammocks, scrub, pine flatwoods, dry prairies, and coastal dunes. Gopher tortoises can also live in man-made environments, such as pastures, old fields, railroad beds, and grassy roadsides. To be suitable for gopher tortoises, the habitat must have well drained sandy soils to allow digging burrows, herbaceous forage

plants, and open sunny areas for nesting and basking. Tortoises are considered a “keystone species” with their burrows affording refuge to more than 360 commensal species, including other listed species such as the Eastern indigo snake, Florida pine snake, burrowing owl and the Florida mouse. Habitat alteration and land development pose the most serious threat to the continued survival of the gopher tortoise (Alderson, D. 2002). Two (2) gopher tortoises were observed within the proposed project limits, on the waste transfer property located at 1810 Lantana Road, during the field survey. Photos and a location map can be found in **Appendix A**. Based on current FWC regulations, any gopher tortoises located within 25 feet of the project construction area must be relocated to an FWC-approved recipient site (FWC 2008, revised 2017). FDOT will conduct a 100% gopher tortoise survey prior to construction and secure all permits needed from FWC to relocate any tortoises and associated commensal species prior to construction. With the implementation of these measures, a species determination of ‘**No Adverse Effect Anticipated**’ was made for the gopher tortoise.

4.6 PROTECTED SPECIES IMPACT EVALUATION

4.6.1 Direct Effects

Table 4-3 provides a summary of effect determinations made for each species that may have the potential to occur within or near the project area. Due to the limited availability of foraging and breeding habitat for many of these species and extensive development within the project Study Area, direct effects to protected species and habitat are anticipated to be minimal.

4.6.2 Indirect Effects

Indirect effects are those caused by the proposed action and occur later in time or are farther removed in distance from the action but are reasonably certain to occur. Indirect effects include changes in land use patterns, population density or growth rate, and the related effects on air and water or other natural systems, including ecosystems (USFWS, 1998). The need for the project is based on future travel demands that will occur with or without the project; growth will not be induced by the project. Indirect effects can also be caused by actions that have an established relationship or connection to the project, and would not, or could not, occur without the original project. As stated in the FDOT PD&E Manual Part 2, Chapter 16 (2019), it is important to consider potential impacts related to habitat connectivity for all wildlife, not just protected species, as habitat fragmentation can directly or indirectly impact multiple species. No habitat fragmentation is anticipated as the project corridor is already a heavily trafficked interchange, with no sensitive or natural habitat and limited suitable habitat for other various species. Other indirect impacts could include mortalities, population declines and pollution. No indirect impacts

to listed species are anticipated as a result of this project. The use of Best Management Practices (BMPs) will reduce any indirect effects to nearby habitat from construction, such as offsite erosion and sedimentation. Construction of a stormwater management system in accordance with current regulations will eliminate any indirect impacts, such as flooding, impacts to water quality, or alteration to vegetative communities in wetlands and surface waters outside the project limits. Overall, the project activities will not result in any indirect effects to any federally or state-listed species.

The project Study Area was also evaluated for the presence of federally designated Critical Habitat as defined by Congress in 50 CFR part 424. Based on this evaluation, it was determined that no federally designated Critical Habitat is present within any of the alternatives. Therefore, this project will not have any indirect impacts to Critical Habitat.

Table 4-3 Federal and State-Listed Species Effect Determinations				
Common Name	Scientific Name	Federal Status	State Status	Effect Determination
Mammals				
West Indian Manatee	<i>Trichechus manatus</i>	T	T	No Effect
Birds				
Black Skimmer	<i>Rynchops niger</i>	NL	ST	No Effect Anticipated
Florida Burrowing Owl	<i>Athene cunicularia floridana</i>	NL	ST	No Effect Anticipated
Everglade Snail Kite	<i>Rostrhamus sociabilis plumbeus</i>	E	E	No Effect
Least Tern	<i>Sterna antillarum</i>	NL	ST	No Effect Anticipated
Little Blue Heron	<i>Egretta caerulea</i>	NL	ST	No Effect Anticipated
Reddish Egret	<i>Egretta rufescens</i>	NL	ST	No Effect Anticipated
Roseate Spoonbill	<i>Platalea ajaja</i>	NL	ST	No Effect Anticipated
Tricolored Heron	<i>Egretta tricolor</i>	NL	ST	No Effect Anticipated
Florida scrub-Jay	<i>Apelocoma coerulscens</i>	T	T	No Effect
Wood Stork	<i>Mycteria americana</i>	T	T	No Effect
Reptiles				
Eastern Indigo Snake	<i>Drymarchon corais couperi</i>	T	T	May Affect, Not Likely to Adversely Affect
Gopher Tortoise	<i>Gopherus polyphemus</i>	CS	ST	No Adverse Effect Anticipated
E = Federally Endangered, T = Federally Threatened, ST = State Threatened, CS = Candidate Species, NL = Not Listed				

4.6.3 Cumulative Effects

Cumulative effects are defined as “those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation” (USFWS and NMFS 1998). Cumulative effects result from the incremental impact of the action when added to other past, present and reasonably foreseeable future

actions regardless of what agency or person undertakes such other actions (FDOT Cumulative Effects Manual). Based on the current condition of the project Study Area being a heavily trafficked and urbanized interchange, no cumulative impacts to listed species are anticipated as a result of this project.

5.0 WETLAND AND SURFACE WATER EVALUATION

Agency coordination to obtain wetland information for this project occurred through the ETDM Programming Screening (Project #14338), where members of the ETAT provide input and comments regarding the project. The Florida Department of Environmental Protection (FDEP), USACE, SFWMD, and NMFS assigned a DOE of “*none*”, while the U.S. Environmental Protection Agency (EPA) assigned a DOE of “*moderate*”, and USFWS assigned a DOE of “*minimal*” for wetlands.

Pursuant to Presidential Executive Order 11990 entitled “Protection of Wetlands,” the U.S. Department of Transportation (USDOT) developed the Preservation of the Nation’s Wetlands policy (USDOT Order 5660.1A; August 24, 1978), which requires all federally funded highway projects to protect wetlands to the greatest extent possible. In accordance with National Environmental Policy Act (NEPA) and this policy, the project was evaluated for impacts to wetlands, stormwater management (i.e. drainage) features, or other surface waters. The extent of potential impacts on wetland functions and values, and potential mitigative measures to offset unavoidable impacts are considered. The project area was reviewed to identify, delineate, and evaluate wetlands and surface waters located within or adjacent to the SR 9/I-95 interchange at Lantana Road from High Ridge Road to Andrew Redding Road.

5.1 METHODOLOGY

A desktop review of existing information, including aerial photographs, GIS databases and previous permit documentation, was performed prior to the jurisdictional field assessment conducted on September 6, 2019 by field biologists experienced in south Florida flora and fauna. The object of the field assessment was to identify any existing wetlands, stormwater swales containing hydrophytic vegetation and other surface water communities. Wetland surveys were conducted in accordance with the USACE Wetland Delineation Manual (Technical Report Y-87-1), the Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (ERDC/ED TR-10-20) and Chapter 62-34, FAC. During the field investigation, plant species were identified and characterized for any wetland, stormwater swale or surface water containing hydrophytic vegetation. Exotic/nuisance plant species coverages and other notable occurrences were recorded for all jurisdictional features. Wildlife observations or signs of wildlife were recorded, with special attention to listed species (as described in the Protected Species and Habitat Evaluation Section). Each feature was classified using the FLUCCS Manual (FDOT 1999) and the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al, 1979).

5.2 WETLAND IDENTIFICATION, DELINEATION AND CLASSIFICATION

Based on the field investigation conducted, there are no existing wetlands or other surface waters containing hydrophytic vegetation within the project area.

5.2.1 Wetlands

Lake Osborne located approximately 550 feet west of the project area is classified as a lacustrine wetland under the National Wetland Inventory Areas. Lacustrine wetlands are defined as non-tidal and tidal freshwater wetlands within an intermittently to permanently flooded lake or reservoir larger than 20 acres (lakes) and/or deeper than 6.6 feet. Lake Worth Lagoon located approximately 4,800 feet east of the project area is classified as an estuarine wetland under the National Wetland Inventory Areas. Estuarine wetlands are defined as tidal wetlands in low wave energy environments where the salinity of the water is greater than 0.5 part per thousand (PPT) and is variable due to evaporation and the mixing of seawater and freshwater. These waterbodies are both located outside of the project area and no impacts, to either wetland feature, are anticipated.

5.2.2 Other Surface Waters

There are no other surface waters located within the project area.

5.2.3 Stormwater Management Features

One stormwater management feature, an FDOT detention pond, is located within drainage Basin 3 of the I-95/Lantana Road Interchange. This feature, permitted under SFWMD Environmental Resource Permit (ERP) 50-03485-S (Application #120810-1), is located under the Lantana Road overpass and southbound I-95 on/off-ramps to Lantana road and manages stormwater runoff within the project interchange (See **Figure 5-1** for Stormwater Management Features). The Preferred Alternative includes the conversion of the southbound on/off-ramps to Mechanically Stabilized Earth (MSE) walls, which will impact the detention pond and reduce storage volume by 76%. To account for the volume loss, and provide additional storage for new impervious area, the pond will be relocated along an existing FDOT swale adjacent to southbound I-95 within FDOT right of way. More information including stormwater management improvements and mitigation for loss of storage can be found in the Drainage Analysis Report on file at FDOT District Four.

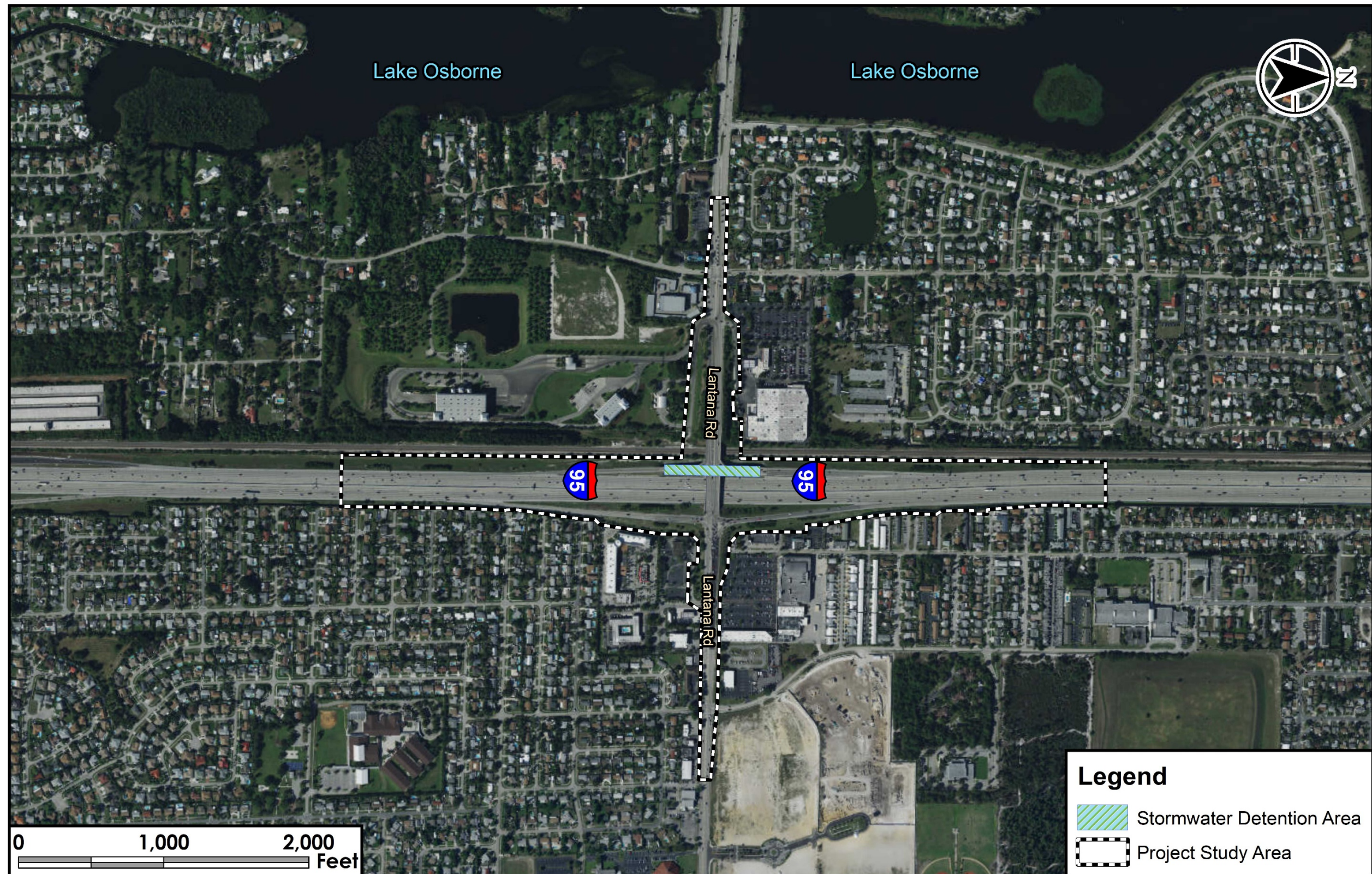


Figure 5-1 Stormwater Management Features

5.3 WETLAND IMPACT ASSESSMENT

5.3.1 Direct and Indirect Impacts

No jurisdictional wetlands are present within the project area. Therefore, no direct or indirect impacts are anticipated to wetlands as a result of the proposed improvements. Construction of a stormwater management system, in accordance with current criteria established in the SFWMD *Environmental Resource Permit Applicants Handbook Volumes I and II*, will handle the treatment and attenuation of discharges to nearby waterbodies caused by the increase in impervious surfaces and stormwater runoff associated with the proposed improvements. The stormwater management system will also eliminate indirect impacts such as flooding, impacts to water quality and alterations to vegetative communities in wetlands and surface waters outside the project area.

5.3.2 Cumulative Impacts

Cumulative wetland impacts include the combined direct and indirect wetland impacts associated with the proposed improvements and other reasonably foreseeable actions that are independent of the proposed improvements. As no direct or indirect impacts to wetlands are anticipated, due to the lack of wetlands within the project area, no cumulative impacts are anticipated.

5.3.3 Avoidance and Minimization

No wetland mitigation for unavoidable wetland impacts is anticipated for this project as there are no impacts to wetlands associated with the proposed improvements.

The project interchange is within the boundaries of the Loxahatchee River Watershed Restoration Aquifer Storage and Recovery project, associated with Comprehensive Everglades Restoration Plan (CERP). The goal of the watershed restoration project is to capture and store excess flows for later use during dry periods. There are also two Verified Impaired Florida Waters, Canal E-4/Lake Osborne and Lake Worth Lagoon, near the project area (approximately 550 feet west and 4,800 feet east respectively), and runoff within urban areas is a source of water pollution. Increases to impervious surfaces, associated with the proposed improvements, will increase stormwater runoff within the project area, and could impact surface and groundwater quality to nearby waterbodies. The following avoidance and minimization practices were recommended by the EPA in the ETDM ETAT comments:

- Align stormwater engineering and design with the CERP to receive the maximum level of stormwater treatment.

- Stormwater runoff should be diverted from waterbodies.
- Maximize the collection and treatment of stormwater.
- Stormwater collection and treatment mechanisms should be designed to protect the surrounding surface water that have already experienced impacts from roadway runoff.
- Implement best management practices to prevent or reduce soil erosion into surface waters and minimize adverse soil impacts.
- Evaluate Low-Impact Development (LID) stormwater management practices during PD&E.

One stormwater management feature, an FDOT dry detention pond located under the southbound I-95 on/off-ramps and Lantana Road overpass, will be impacted from the conversion of the existing deck bridges to MSE walls. This impact will reduce storage volume by 76%. To account for the volume loss, and provide additional storage for new impervious area, the pond will be relocated along an existing FDOT swale within FDOT right of way. More information regarding stormwater management and water quality can be found in the Drainage Report and the Water Quality Impact Evaluation form on file at FDOT District Four.

6.0 ESSENTIAL FISH HABITAT ASSESSMENT

The Magnuson-Stevens Fishery Conservation and Management Act [(MSFCMA), 16 USC 1801 et seq. Public Law 104-208] reflects the Secretary of Commerce and Fishery Management Council's authority and responsibilities for the protection of EFH. The MSFCMA specifies that each federal agency shall consult with the Secretary with respect to any action authorized (or proposed to be), funded, or undertaken, by such agency that may adversely affect any EFH. EFH is defined in the MSFCMA as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." The regional Fishery Management Council (FMC) that has jurisdiction over the Study Area's region of south Florida is the South Atlantic Fishery Management Council (SAFMC). The SAFMC is responsible for identifying EFH for federally managed species in the southeast United States and designates thirteen (13) habitats as EFH for federally managed species which are divided into estuarine areas and marine areas. The estuarine areas include the following: estuarine emergent wetlands, estuarine scrub / shrub mangroves, submerged aquatic vegetation, oyster reefs and shell banks, intertidal flats, palustrine emergent and forested wetlands, aquatic beds, and estuarine water column. Marine areas include the following: live / hard bottoms, coral and coral reefs, artificial / manmade reefs, sargassum, and water column. Highly migratory species, such as tunas, billfish, and sharks, are also managed by NMFS and have EFH designations in these areas of the Southeast as well. Federal agencies are required to consult with NMFS when their activities, including permits and licenses they issue, may adversely affect EFH and respond to NMFS recommendations for protecting and conserving EFH.

During the ETDM Screening, the ETAT representative from NMFS stated that the project would not directly or indirectly impact any areas that support EFH or support NOAA trust fishery resources. Additionally, there are no threatened or endangered species or critical habitat under the purview of NMFS that occur within the project Study Area. Therefore, no EFH assessment was required and no additional consultation with NMFS is necessary unless the project is modified, or the project area is changed in a manner that could adversely affect EFH.

7.0 ANTICIPATED PERMITS

No wetland impacts are proposed for this project, therefore mitigation for unavoidable wetland impacts is not anticipated to be required for this project. There are potential impacts to gopher tortoises associated with the Preferred Alternative, and an FWC relocation permit may be required. An FWC 100% gopher tortoise survey will be required 90 days prior to construction. If any active burrows are found within 25 feet of proposed construction, a permit will be required. A “10 or Fewer Burrows Permit” is anticipated but permitting will be dictated by survey results. A modification to SFWMD ERP 50-03485-S (Application #120810-1) will be required for the construction of stormwater management containment and treatment areas. An FDEP National Pollutant Discharge Elimination System (NPDES) Construction General Permit will also be required for discharges associated with construction activities.

8.0 CONCLUSION

The Preferred Alternative consists of improvements to the SR 9/I-95 Lantana Road Interchange and along Lantana Road located in a developed and urbanized area of Palm Beach County, Florida. Using FLUCCS codes and field verification, existing conditions within the project area are primarily commercial and residential with no natural areas. These conditions provide limited potential for protected species to inhabit the project area. However, with potential habitat nearby, including Lake Osborne and Lake Worth Lagoon, (approximately 550 feet west and 4,800 feet east respectively), some threatened or endangered species have the potential to occur within the project limits.

There are thirteen (13) federally and/or state-listed species with the potential to occur within the project corridor. See **Table 8-1** for a list of these species, their status and their effect determinations. No natural areas exist within the project area, and the limited habitat available for certain species, including the Florida burrowing owl, Eastern indigo snake and gopher tortoise is degraded. Furthermore, only the gopher tortoise was observed during the species survey. Prior to construction, a 100% gopher tortoise survey will be completed, and any individuals observed within 25 feet of proposed construction will be relocated.

Table 8-1 Federal and State-Listed Species Effect Determinations

Common Name	Scientific Name	Federal Status	State Status	Effect Determination
Mammals				
West Indian Manatee	<i>Trichechus manatus</i>	T	T	No Effect
Birds				
Black Skimmer	<i>Rynchops niger</i>	NL	ST	No Effect Anticipated
Florida Burrowing Owl	<i>Athene cunicularia floridana</i>	NL	ST	No Effect Anticipated
Everglade Snail Kite	<i>Rostrhamus sociabilis plumbeus</i>	E	E	No Effect
Least Tern	<i>Sterna antillarum</i>	NL	T	No Effect Anticipated
Little Blue Heron	<i>Egretta caerulea</i>	NL	ST	No Effect Anticipated
Reddish Egret	<i>Egretta rufescens</i>	NL	ST	No Effect Anticipated
Roseate Spoonbill	<i>Platalea ajaja</i>	NL	ST	No Effect Anticipated
Tricolored Heron	<i>Egretta tricolor</i>	NL	ST	No Effect Anticipated
Florida scrub-Jay	<i>Apelocoma coerulscens</i>	T	T	No Effect
Wood Stork	<i>Mycteria americana</i>	T	T	No Effect
Reptiles				
Eastern Indigo Snake	<i>Drymarchon corais couperi</i>	T	T	May Affect, Not Likely to Adversely Affect
Gopher Tortoise	<i>Gopherus polyphemus</i>	CS	T	No Adverse Effect Anticipated

E = Federally Endangered, T = Federally Threatened, ST = State Threatened, CS = Candidate Species, NL = Not Listed

No Essential Fish Habitat (EFH) assessment is required for this project, as this project has no involvement with any areas that support EFH or National Oceanic and Atmospheric Administration (NOAA) trust fishery resources.

No jurisdictional wetlands or other surface waters are located within the project area, therefore no direct or indirect impacts to wetlands are associated with the Preferred Alternative. One

stormwater management feature, an FDOT detention pond located under the southbound I-95 on/off-ramps and Lantana Road overpass, will be impacted from the conversion of the existing deck bridges to MSE walls. This impact will reduce storage volume by 76%. To account for the volume loss, and provide additional storage for new impervious area, the pond will be relocated along an FDOT swale within FDOT right of way. This relocation will require a permit modification for SFWMD ERP 50-04345-S (Application #120810-1).

Agency coordination will continue throughout the design phase and associated permitting effort for the project.

The following permits are anticipated to be obtained prior to construction:

1. FWC Gopher Tortoise Relocation Permit (Pending pre-construction survey results)
2. Modification for SFWMD ERP 50-03485-S (Application #120810-1)
3. FDEP NPDES Construction General Permit

The following Implementation measures will also be included during the construction phase:

1. FDOT will implement BMPs for erosion and sedimentation control.
2. FDOT will conduct a species-specific pre-construction survey for the gopher tortoise.

FDOT will adhere to the following commitments:

1. FDOT will implement and adhere to the most current versions of the following protection measures: *USFWS Standard Protection Measures for the Eastern Indigo Snake*.

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